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The Gift of
The New York State
Agricultural Society,
through
Hon. B. P. Johnson,
of Albany.
Rec'd. Dec. 23,
1854.

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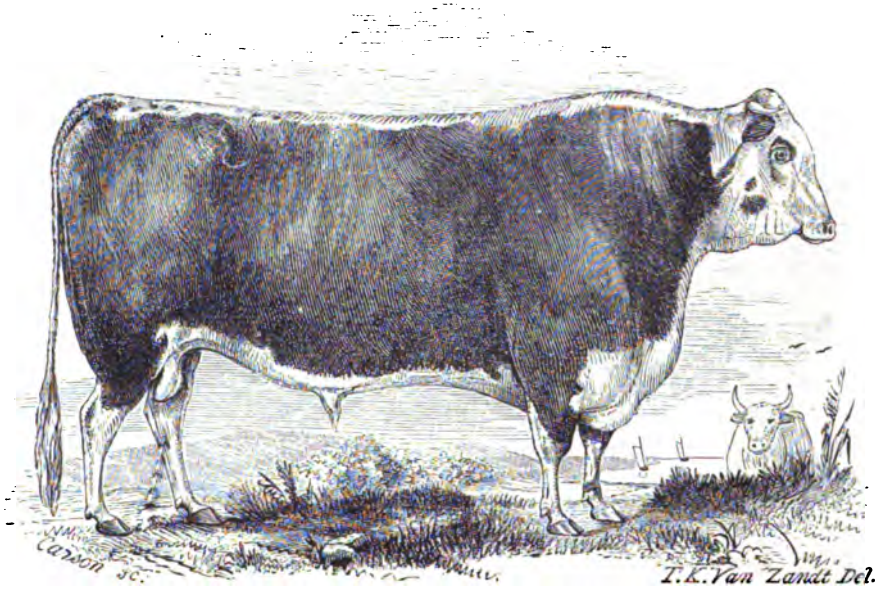

"CARDINAL WISEMAN," a Hereford Bull, three years old, winner of the first prize, $25, at Saratoga, 1853, owned by E. CORNING, jr., was imported in the fall of 1851, from the herd of Rev. Mr. SMYTHIE, Lynde Court, Herefordshire; calved August 19, 1850; sired by "Expectation," out of "Wisdom," by "Woodstock;" grand-dam by "Young Favorite," out of Mr. TULLY'S "Tredegar" prize heifer. (See Hereford Herd Book).

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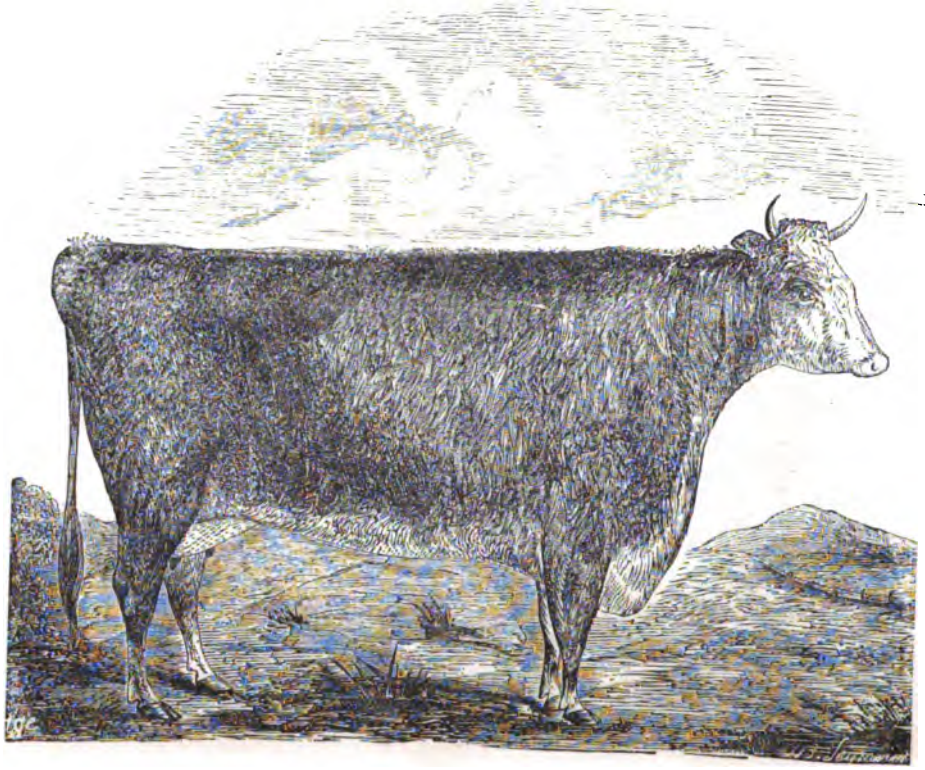

"WOODBINE," Hereford heifer, two years old, winner of the first prize, $20, at Saratoga, Sept., 1853; bred by W. H. SOTHAM; the property of H. BOWEN, Jr., Summit, Cayuga Co., N. Y. Pedigree: "Woodbine," got by "Tromp;" dam, "Ellen," by "Trojan," No. 2; grand-dam, "Rose," by "Sir George" (405); great-grand-dam, "Perfection," "Major," a son of "Noble" (238).

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TRANSACTIONS

OF THE

N. Y. State Agricultural Society,

WITH AN

ABSTRACT OF THE PROCEEDING

OF THE

COUNTY AGRICULTURAL SOCIETIES.

VOL. XIII.—1853.

ALBANY:
C. VAN BENTHUYSEN, PRINTER TO THE LEGISLATURE.
1854.

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NOTICE.

In presenting the Thirteenth Volume of the Transactions of the New-York State Agricultural Society to the farmers of the State, we indulge the hope that it will prove useful to them in their pursuit. There are many interesting and instructive papers contained in this volume, and much that evinces a decided progress in the Agriculture of our State. A reference to the papers presented, will show the importance of the subjects on which they treat, and their perusal cannot but improve the farmer. Many of the county reports are of very great value, and give decided evidence that attention has been given to the suggestions which have been heretofore made, and the results are of a most gratifying character. While such are the returns for the efforts which have been made, to improve the Agriculture of our State, no other inducement will be needed to insure constant devotion to promote this great interest of our State and country, and to secure for it that position to which it is justly entitled. In doing this, the improvement of farmers themselves will keep pace with that of the soil they cultivate, and the American farmer will in point of intelligence, be as far superior to those of the old world, as he now is in the free institutions and privileges which he is permitted to enjoy.

In this volume will be found a very important article on the Cultivation of Flax, by Prof. John Wilson, of England, which will command the attention of our farmers. The report on the potato experiments of 1853, is a very important article, as are many others.

To the gentlemen who have contributed articles to this volume, and who in various ways have aided in its preparation, the thanks of the subscriber are most gratefully tendered.

B. P. JOHNSON,
Corres. Secretary.

AGRICULTURAL ROOMS, *March* 1, 1854.

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INTRODUCTION.

AN ACT TO CONTINUE THE ACT INCORPORATING THE NEW-YORK STATE AGRICULTURAL SOCIETY.

[Passed March 16, 1852, "three-fifths being present."]

The People of the State of New-York, represented in Senate and Assembly, do enact as follows:

SEC. 1. The New-York State Agricultural Society, incorporated April twenty-sixth, one thousand eight hundred and thirty-two, shall continue to be known by that name and style for the term of twenty years, as a body politic and corporate from the twenty-sixth day of April, one thousand eight hundred and fifty-two.

SEC. 2. The object of the Society being to improve the condition of agriculture, horticulture, and the household arts, they shall be allowed for those purposes only, to take and hold real and personal estate, the former to the amount of ten thousand dollars, exclusive of the agricultural museum and library.

SEC. 3. The said corporation shall possess the general powers, and be subject to the liabilities and provisions contained in title third, of the eighteenth chapter, of the first part of the Revised Statutes.

SEC. 4. This act shall take effect immediately.

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CONSTITUTION OF THE NEW-YORK STATE AGRICULTURAL SOCIETY.

The style of this Society shall be "The New-York State Agricultural Society." Its objects shall be to improve the condition of agriculture, Horticulture, and the Household Arts.

SEC. 1. The Society shall consist of such citizens of the State as shall signify in writing, their wish to become members, and shall pay on subscribing not less than one dollar, and annually thereafter one dollar, and also of Honorary and Corresponding members.

The Presidents of County Agricultural Societies, or a delegate from each, shall ex officio be members of this Society.

The payment of ten dollars or more, shall constitute a member for life, and shall exempt the donor from annual contributions.

SEC. 2. The officers of the Society shall consist of a President, eight Vice Presidents, one to be located in each Judicial District; a Recording Secretary, a Corresponding Secretary, a Treasurer, an Executive Committee, to consist of the officers above named, and five additional members, and five of the Ex-Presidents shall be ex officio members of the Executive Committee, and these five shall consist of the five Ex-Presidents whose term of office has last expired, of whom three shall constitute a quorum; and that the Ex-Presidents of the Society, not members of the Executive Committee, shall constitute a Board of Councillors, to which may be referred, for consultation and advice, all questions that may from time to time arise, and in the decision of which the Society may in any manner be interested; and a General Committee, the members of which shall be located in the several counties, and be equal to the representations in the House of Assembly.

SEC. 3. The Recording Secretary shall keep the minutes of the Society. The Corresponding Secretary shall carry on the correspondence with other societies, with individuals, and with the

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general committee, in the furtherance of the objects of the Society.

The Treasurer shall keep the funds of the Society, and disburse them on the order of the President or a Vice President, countersigned by the Recording Secretary, and shall make a report of the receipts and expenditures at the annual meeting in January.

The Executive Committee shall take charge of and distribute or preserve all seeds, plants, books, models, &c., which may be transmitted to the Society; and shall have also the charge of all communications designed or calculated for publication, and so far as they may deem expedient, shall collect, arrange and publish the same in such manner and form as they shall deem best calculated to promote the objects of the Society.

The General Committee are charged with the interests of the Society in the counties in which they shall respectively reside, and will constitute a medium of communication between the Executive Committee and the remote members of the Society.

Sec. 4. There shall be an annual meeting of the Society on the second Wednesday of February, in the city of Albany, at which time all the officers shall be elected by a plurality of votes and by ballot, with the exception of the General Committee for the counties, which may be appointed by the Executive Committee, who shall have power to fill any vacancies which may occur in the officers of the Society during the year. Extra meetings may be convoked by the Executive Committee. Fifteen members shall be a quorum for the transaction of business.

Sec. 5. The Society shall hold an Annual Cattle Show and Fair at such time and place as shall be designated by the Executive Committee.

Sec. 6. This Constitution can be altered by a vote of two-thirds of the members present at any annual meeting, upon one year's previous notice in writing.

State Agricultural Rooms,
February 10, 1854.

I certify the above to be a true copy of the Constitution of the New-York State Agricultural Society.

B. P. JOHNSON,
Cor. Secretary.

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LIFE MEMBERS, 1854.

BEEKMAN, J. P., Kinderhook.
BELL, THOMAS, Mott Haven.
BUELL, WILLIAM, Rochester.
BECAR, NOEL J., New-York.
BBOWN, LEWIS G., Westchester.
BOUGHTON, CHAUNCEY, Halfmoon.
BOWEN, HENRY C., Brooklyn.
BURKHALTER, CHARLES, New-York.
CAMPBELL, WM. BAYARD, New-York.
CLARKE, GEORGE, Springfield.
CLARKSON, AUGUSTUS, Potsdam.
CORNING, ERASTUS, Albany.
CORNING, ERASTUS, Jr., Albany.
COREY, JOHN A., Saratoga Springs.
COLEMAN, ROBERT B., New-York.
CROCKER, DAVID, Jr., New-York.
CLAFFLIN, HORACE B., Brooklyn.
CHESEBORO, E., Guilderland.
DELAVAN, HENRY W.,* Ballston.
DELAFIELD, JOHN,* Oaklands.
DICKEY, GEORGE, New-York.
EARLE, MORRIS, New-York.
FELLOWS, JOSEPH, Geneva.
FOSTER, H. TEN EYCK, Lakeland.
FINLAY, J. BEEKMAN, Saratoga Springs.
FAILE, EDWARD G., New-York.
FAILE, THOMAS H., New-York.
FAILE, EDWARD, West Farms.
FAIRBANKS, THADDEUS, St. Johnsbury, Vt.
FAIRBANKS, ERASTUS, St. Johnsbury, Vt.
GEDDES, GEO., Fairmount.
GREIG, JOHN, Canandaigua.
HUNTINGTON, BENJ. N., Rome.
HARTSHORNE, GEORGE, Rahway, N. J.
HAVILAND, ISAAC, Hempstead Branch.

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HAMILTON, DAVID, Watervliet.
HAIGHT, EDWARD, Westchester.
HUNT, WILSON G., New-York.
HERRICK, ELIAS H., New-York.
HERRICK, JOHN S., New-York.
JOHNSON, BENJ. P., Albany.
JACKSON, JOHN C., New-York.
KELLY, WILLIAM, Rhinebeck.
KIRTLAND, B. B., Greenbush.
LE RAY DE CHAUMONT, J.,* Le Raysville.
LENOX, JAMES, New-York.
LIVERMORE, CHARLES F., New-York.
LIVINGSTON, EDWARD P.,* Clermont.
LEE, JOHN R., Buffalo.
LUDLOW, WM. H., Sayville.
LINKLAEN, LEDYARD, Cazenovia.
McINTYRE, ARCHIBALD, Albany.
McINTYRE, J. McDONALD, Albany.
MARVIN, JAMES M., Saratoga Springs.
MORRIS, LEWIS G., Mt. Fordham.
MORRIS, FORDHAM, Mt. Fordham.
MORRIS, FRANCIS, Mt. Fordham.
MUNN, SAMUEL, Mott Haven.
NORTON, ROBERT, New-York.
ODELL, WM. T., Ballston.
OTIS, H. G.
PATRICK, M. R., Sackets Harbor.
PRENTICE, EZRA P., Albany.
PLUMB, JOSIAH B., Albany.
PHELPS, THOMAS W., New-York.
ROTCH, FRANCIS, Morris.
RUST, PHILO N.,* Syracuse.
ROBINSON, HENRY, Newburgh.
RICHARDSON, THOMAS, West Farms.
REED, ALMET, New-York.
SAXTON, C. M., New-York.
SEWARD, WM. H., Auburn.
SEYMOUR, HORATIO, Utica.
SHERWOOD, JOHN M., Auburn.
STETSON, CHARLES A., New-York.
SPENCER, LORILLARD, Westchester.
SPINNER, JOHN D., Herkimer.
STEVENS, E. R.
SHEAFE, J. F., Dutchess.
SUYDAM, HENRY, Jr., New-York.

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SMITH, N. EVERETT, New-York.
SHERMAN, BENJ. B., New-York.
THOMPSON, SAMUEL L., Setauket.
TOWNSEND, JOHN,* Albany.
TUCKER, LUTHER, Albany.
THORNE, JONATHAN. Washingtonville.
TITUS, JAMES H., Malone.
TABER, SAMUEL T., Chesnut Ridge.
THORNE, EDWIN, New-York.
VAIL, GEO., Troy.
VAN RENSSELAER, STEPHEN,* Albany.
VAN RENSSELAER, STEPHEN, Albany.
VAN RENSSELAER, WM. P., Albany.
VAN PELT, HENRY, New-York.
VAN RENSSELAER, ROBERT H., Morris.
WADSWORTH, JAMES,* Geneseo.
WADSWORTH. JAMES S., Geneseo.
WADSWORTH, WM. W.,* Geneseo.
WELLS, EDWARD, Johnstown.
WHITE, HOLLIS, Niagara Falls.
WARD, JOHN, New-York.
WATSON, WILLIAM, West Farms.
WAINWRIGHT, C. S., Rhinebeck.
WOLFE, GEO. DAVID, New-York.
WELLS, HENRY, Aurora.
WYKOFF, S. S., New-York.
WHITLOCK, BENJ. N., West Farms.
YELVERTON, ROBERT, New-York.

* Deceased.

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OFFICERS FOR 1854.

President,

WILLIAM KELLY, Rhinebeck, Dutchess county.

Vice-Presidents,

1st district, JOHN C. JACKSON, New-York.
2d district, A. B. CONGER, Haverstraw, Rockland county.
3d district, GEORGE VAIL, Troy, Rensselaer county.
4th district, LE ROY MOWRY, Greenwich, Washington county.
5th district, J. C. WOODRUFF, Syracuse, Onondaga county.
6th district, J. BARBER, Homer, Cortland county.
7th district, D. H. ABEL, Geneseo, Livingston county.
8th district, SILAS M. BURROUGHS, Medina, Orleans county

Corresponding Secretary,

B. P. JOHNSON, Albany.

Recording Secretary,

ERASTUS CORNING, Jr., Albany.

Treasurer,

T. B. KIRTLAND, Albany.

Executive Committee,

EDGAR C. DIBBLE, Batavia, Genesee county.
ELON COMSTOCK, Rome, Oneida county.
CHARLES MORRELL, Ludlowville, Tompkins county.
T. B. ARDEN,* Garretson, Putnam county.
A. STEVENS, New-York.

* EDWARD G. FAILE, of West Farms, was appointed a member of the Executive Committee, April 6th, in place of T. B. Arden, resigned.

Ex-Presidents, ex officio members,

JOHN A. KING,
E. P. PRENTICE.
HENRY WAGER,
LEWIS G. MORRIS.

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State of New-York.

No. 151.

IN ASSEMBLY, MAR. 2, 1854.

COMMUNICATION

From the Corresponding Secretary of the New-York State Agricultural Society.

STATE AGRICULTURAL SOCIETY,
March 1, 1854.

To the Hon. ROBERT H. PRUYN,
Speaker of the Assembly:

In pursuance of the acts of the Legislature for the promotion of Agriculture, I present herewith the annual report of the New-York State Agricultural Society, with the proceedings of the Executive Committee, and abstracts of the reports of county societies for 1853.

Very respectfully, yours
B. P. JOHNSON,
Cor. Secretary.

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TRANSACTIONS

OF THE

New-York State Agricultural Society.

Report of the Executive Committee for 1853.

TO THE LEGISLATURE OF THE STATE OF NEW-YORK.

The Executive Committee of the New-York State Agricultural Society, in pursuance of the Act for the encouragement of Agriculture,

RESPECTFULLY REPORT:

That during the past year the great interests of agriculture and the mechanic arts have been well sustained, and the reports of the proceedings of the State and County Associations, which are herewith submitted, will more particularly exemplify the progress which has been made. The prosperity of the agricultural interest during the past year, has been of a most marked and interesting character, and although, to some extent, the great foreign demand which has arisen for bread stuffs, has increased the price of the farmer's produce, still the regular increase and advance of this interest has been most encouraging.

That much of this is due to the increased intelligence of the farmer, and to the adoption of wise and judicious improve-

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ments in the various departments of agriculture, is most clearly shown by the returns from the County Societies, which accompany this report. From one of our best grain growing counties, the President of the Agricultural Society, an intelligent and practical farmer, says: "*Draining* is receiving attention, where most needed, and with great results, though comparatively little has been done, that is desired, and that will be done in a few years. The value of our farms is steadily increasing, and will continue so to increase, as improvement developes the resources of our country. Within the last ten years, lands have advanced fifty per cent., and were never advancing faster than at present."

In an other county the president says: "The increase of good cultivation is certainly advancing, and may justly be chargeable to the knowledge obtained by the perusal of more scientific works, than by those that have preceded us. *Drainage* has received some attention, and its advantages are to render the soil more dry and of easier tillage, making the air more salubrious, less unhealthy, and better adapted for the habitation of civilized man. The value of farms is on the increase in this county. There is an increase of the number of acres under cultivation, showing an improved husbandry. This is due to a more general reading of agricultural works, and the influence of our well conducted societies for the promotion of Agriculture and the Mechanic Arts."

These are but samples of the testimony we have before us of the progressive character of the agricultural interests of our State, and in connexion with the conceded prosperity of this interest, afford the most gratifying assurance, that our State and County associations are conducting their operations in a manner calculated to advance the cause of agriculture.

This Society has ever endeavored in all its operations to recommend no improvement which has not stood the test of experiment, and which, if adopted, would add to the success of the farmer, and the Executive Committee feel assured, that in their operations, seconded as they have been by some of the best farmers in the State, the results have been such as to add largely in the aggregate to the resources of our State.

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In our last report we alluded to the cultivation of grasses. The Executive Committee ordered early in the season a number of varieties of the best cultivated grasses of Great Britain, which have been received, but too late for use the present year. They will be distributed during the winter, and it is believed much good will result from their introduction. Of the importance of this addition to our grasses for pasturage and meadow, we refer to the report of the last year, which contains the views of the very able committee, which had the subject under consideration, and a report as to the manner of cultivation of the grasses accompanying this report.

The subject of agricultural education has ever been a prominent object with the various boards of management of this Society, for many years, and the Society has, at almost every annual meeting, expressed its views in favor of the establishment of a school for that purpose. Renewed applications from year to year have been made to the Legislature, but, although always receiving favorable reports from the intelligent committees, to whom the subject was referred, no law was passed to carry out the objects of the Society.

During the last session of the Legislature, through the exertions of John Delafield, Ex-President of the Society, a law was passed, chartering the "New-York State Agricultural College." The organization of the college was effected early in the summer, and Mr. Delafield was elected president. With a wise and discriminating zeal he commenced the subscription for the funds of the institution, and was most successfully prosecuting the work, when he was suddenly cut down in the midst of his usefulness, and when, to human appearance, he was better calculated for public usefulness, than at any former period of his valuable life. But He who does all things well, best knew what was for our interest, and to assure us perhaps, that, in reliance upon him alone for guidance, was the only path for safety. We trust that we shall be enabled to improve this dispensation, afflicting as it is, and that those who have in charge this great work, will be so directed in their operations, as to prosecute it to a successful issue.

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The death of Mr. Delafield, who had been associated with us for years, and whose counsels and labors have done so much to elevate and advance our Society, and the agricultural interests of the State, produced a feeling throughout the State, that has never been equalled among our farmers, unless by the death of the lamented Buel, one of our earliest and most intelligent benefactors. The Executive Committee, in view of the great loss which the Society and Agricultural interest of the State had sustained in his death, adopted appropriate resolutions, which are annexed. We desire to improve this lesson of mortality, and to redouble our exertions to do what is before us, without delay, feeling that our time here also is but brief at best, and that what is now neglected, we may never have the opportunity given us, to remedy.

Death of Mr. Delafield.

The following are the resolutions, offered November 9, 1853.

Mr. William Kelly, Vice-President, offered the following resolutions:

Whereas, In the dispensation of Divine Providence, our friend and associate, John Delafield, has been taken from time to eternity; and whereas, his long, ardent and valuable services, in connection with the cause of agriculture in our State, render it proper that we should endeavor to perpetuate his memory on the records of the New-York State Agricultural Society, and thus express our regard for his memory; Therefore

Resolved, That in the death of the Hon. John Delafield, formerly President of the New-York State Agricultural Society, and long our associate as a member of this Executive Committee, we have cause to mourn the loss of one who has, by his intelligence his literary and scientific attainments, his unwearied zeal, his urbane deportment, and his entire devotion to the cause, done more than almost any other man of the time, towards advancing the art of farming, and the spread of valuable practical knowledge among our farming population. In the expression of this sorrow, we are speaking the feelings, not alone of every member

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of this Society, but of every enlightened friend of agriculture throughout the Union.

Resolved, That as farmers we owe a debt of gratitude to the memory of our deceased friend, for the untiring efforts he has made, during past years, towards establishing within our State, an Agricultural College, which should extend to every farmer's son an opportunity to pursue those special studies having a direct bearing on his future pursuits, and which should also serve as a stimulus to the farmers of other States, to give to the cause of agricultural education, the attention it demands. While we thus express our sense of obligation, we lament that he should have been taken from us, just at the moment when he (almost single handed) had overcome every obstacle, and was rejoicing in the confident hope of seeing, within a few months, the darling object of his wishes accomplished in the successful establishment of the New-York State Agricultural College.

Resolved, That these resolutions be entered at length in the Transactions of the Society, and that a copy signed by the President and Secretary, be transmitted to the widow and family of Mr. Delafield, with the assurance of the heartfelt sympathy, which we, individually, feel towards them in this severe bereavement.

Transactions.

The Transactions of our society are yearly increasing in interest, and the demand for them is such, that it cannot be supplied. The entire volumes of our reports cannot, but in rare instances, be had. Foreign societies and State societies, in our own country, are constantly calling for them; and while the Executive Committee furnish them in exchange, as far as practicable, they regret that they can no longer furnish the first five volumes to any extent. From the correspondence both at home and abroad, they are gratified at the assurance they are constantly receiving, that there is no work to be had, that embodies more reliable and useful information, than these reports. It having been ever the aim of the Executive Committee of the Society, to make their Transactions a reliable record of the progress of the farmers of New-

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York, it cannot but be in the highest degree creditable to the Society, that the objects they had in view, have in so good a degree, been realized. They trust, therefore, that the same enlightened liberality that has heretofore given the reports to the farmers of our State, and to the country at large, will continue to distribute them. We are satisfied that no money has been more advantageously employed in our State, than that which has contributed to placing in the hands of the farmer, these results of the operations of our agricultural associations.

The Executive Committee regret that in their publication, annually, they are so long delayed; but the matter is entirely beyond their control. They have had the matter ready for publication at the time these reports are presented, and would gladly have had them before the public soon after the adjournment of the Legislature.

The Annual Fair.

The thirteenth great fair of the Society, was held at the village of Saratoga Springs, September 20, 21, 22, 23. There is rarely an instance in the history of our country, where for thirteen successive years, the people of the State have given their approving presence to an institution having for its great end and object, the advancement of the cause of agriculture. The progress in public sentiment toward a just appreciation of the value and merit of the pursuit of the farmer, is by this strongly marked. An occupation once neglected, has for a period in itself, constituting a great space of time, been honored by the attention of the people, beyond any other vocation. Year after year has seen the thronged area of the fair, and the attendance but of those whose interest in the exhibition was unfeigned, and whose intelligent observation was each year increasing the standard by which the excellence of the article exhibited, was measured and judged. The attendance on this occasion, was not as large as on some preceding ones; but viewed apart om a comparison with the years when the most favorable circumstances existed, the numbers assembled were large and gratifying. The concourse assembled within the area, viewing with pleasure and discriminating attention, the articles gathered, was, on one of the days, very great; and during all the

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time was such as would, in the early days of the society, have been considered as illustrating the zeal of the people in the great object for which this festival of agriculture is instituted.

The occurrence of a series of unpleasant days, of cloudy and rainy weather, kept back a very great number of those who would have been glad to be in attendance. While this was regretted, its effect was but temporary. The satisfaction evinced by those who saw here how much of progress was manifest, what vast advance has been made in most important departments, fully repaid the exertions which had characterised the organization of the fair.

The Society felt itself honored by the presence of the chief magistrate of the State, and as from year to year the Executive has deemed the occasion one in which to participate, it has encouraged those who have labored to make the fair worthy of such notice. Just so long as the rulers of the State shall deem, that they cannot attend a festival more worthy of encouragement than this, will the farmers feel that their cause retains its deserved place among the institutions of the State. While to commerce and to trade, and to the mechanic arts, the republic is indebted for much of its wealth, efficiency and prosperity, the conviction strengthens each year, that the State can find nothing so worthy of its liberality as the cause of agriculture. While the Governor and the honorable members of the Legislature see for themselves the display of the results, which an enlightened attention to the principles of judicious and improved farming has produced, the effect upon the legislation of the country must be such, as to secure to the agriculturist his just share in the wise and salutary provisions for the best interests of this art.

The Society feel pleasure in alluding to the attendance of the representatives of the Press. To the thousands and tens of thousands of intelligent farmers, whose hearts are with the Society, in all its labors for the progress and success of agriculture, but who could not personally attend—it was of all things to be desired that such representation and history should be given, of all the incidents of the festival, that, in every farmer's house, the record should be placed and the result known. This duty was

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performed by the press. The local papers and the great press of the city sent thither competent persons, through whose labors in all parts of the Union it became known, that the farmers of New-York had held their annual festival, and the pleasant history of the excellence and variety of the stock and articles exhibited, was truthfully and agreeably given.

The interests of the press and of the farmer are indissolubly connected. The market of the whole world is that to which the sagacious attention of the agriculturist is given, and the enterprise of the journalist already appreciates this. The intelligence of all that was shown, and done and said, was sent to all parts of the country, and the Society, as heretofore, made the press a welcome visitor, and they are assured that their effort was appreciated, and in the results fully repaid.

There was ample and capacious grounds arranged, and an efficient police, though the general good order of the community rendered the services of the latter, a pleasant, rather than a painful duty. The welfare of the cattle was sedulously considered, and in the unusually full and excellent catalogue of the stock, it will be seen that these regulations were necessary. The tents and halls were all conveniently arrayed,—scattered in the wide area at convenient distances, the crowd looked admiringly at the skill of the florist, or lingered in thoughtful pleasure around the display of the implements.

In machinery, of that kind and description which the farmer desires to use, which ministers to his prosperity, by the aid of which his great art is to complete its conquest of the earth, and maintain itself as the first and best occupation of man—in all these, this fair furnished much that made glad the heart of those, who remembered what was the show of thirteen years since. To sow and to reap are vocations, which the skill of our inventive countrymen has almost fully taught to steel and iron and wood, to muscles that no man can exhibit, no labor weary. If the Society had produced no other result than that which is written in the great demonstration which it has assisted, that to the farmer, as to the manufacturer, the power of machinery can, in strength

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and cheapness, belong, it would be remunerated for all its exertions. Here one of its greatest values has been written in the history of the greater prosperity of the farmer.

Floral Hall, under the direction of Mr. A. F. Chatfield, assisted by Dr. Payn and the ladies of Saratoga, was handsomely arranged and was thronged by the ladies—and it was evident, that to our country homes are coming, and indeed have already made an abode there, the refinements and comforts, that spring from a wise attention to whatever illustrates in beauty the strong labors of life.

The show of fruit was significant of the great advance which has been made in this department Our leading growers, from all parts of the State, were there with a variety of rich fruits, so complete in catalogue, as to show that there is no necessity for the farmer of New-York to go beyond his own State, for the most delicious of whatever the earth produces.

The great extension of the market for fruit, produced by the railway system of our State, has been seized upon by our culturists, and the reward to our farmers has been of proportionate magnitude. For many years the Society labored in hope to witness the result, now obtained, that the farmers of New-York would realise, that the variety of soil and climate within this great State, was such, that whatever the sun could ripen in the best of all lands, where his beams shine upon the temperate region, might be the product of our own farms; so that the comfort and pleasure of the pursuit of agriculture, as a business for life, might be in every year more and more enhanced.

Address.

To the Hon. William C. Rives, of Virginia, the Society owes a debt of gratitude. He gave to the farmers of New-York a discourse, which is one of the most valuable in their archives, graced as they have been in past years by the eloquent thought of Wright and Spencer, and Bancroft, and Seward, and Quincy, and Seymour, and others identified with our country's history. Mr. Rives possesses for this work unusual advantage, for he had united to the personal care of one of Virginia's large estates, the keen observation of the course of agricultural science and practice in Europe; viewing that, as he did, with the great facility

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afforded by his illustrious public station. His address is enrolled in the Transactions. It has been read by the nation and will be studied by the intelligent farmer to his lasting improvement.

The Society transmit in these papers this notice of their thirteenth annual Fair, with the gratification that those who conduct a great public enterprise, have the satisfaction that they direct their labors to the promotion of a cause, which has in its favor the experience of all mankind. They believe that in the thirteen years past, the American farmer has grown wiser and more prosperous, and this result is their reward.

During one of the evenings of the fair, the Society was favored with a most valued lecture, on Flax, by Professor John Wilson, F. R. S. E., of London, one of Her Majesty's commissioners to this country. It was a most valued and instructive lecture, and will be found among the papers accompanying this report.

We desire to impress upon the society the importance of renewed systematic personal efforts to advance its interests, to increase its funds, and thereby its usefulness. The premium list of the Society should be improved, and all the suggestions which experience has demonstrated as important, will be most cheerfully furnished to our successors. We would advise the making of experiments upon the farm, of the value of manure, of special methods of cropping, &c., if competent persons can be secured to carry out the experiments. The Executive Committee have, in former years, endeavored to accomplish this, but as yet without complete success.

In 1846, premiums were offered for experiments and essays on the stall feeding of cattle and sheep; for converting green crops into manure, for increasing manures, in forming composts, for top dressing of grass; for experiments in subsoil plowing; for the eradication of the Canada thistle; for experiments in draining and irrigation, for the improvement of seed wheat, by culture and propagation; for the efficiency of different manures in the production of root crops, and for the efficacy of different manures in the production of Indian corn. In 1847, premiums were again offered for experiments in stall feeding cattle and sheep; for draining; for top dressing lands, and for root

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crops; and for experiments in fattening animals on Indian corn, to test its value for that purpose; and for butter and cheese dairies.

In 1848, for an essay on the influence of soil on vegetation; and for one on the mode in which gypsum operates in rendering the soil better adapted for the growth of plants and vegetables; and for an essay on the nature of atmospheric influence on soils; and for an analysis of Indian corn; and for experiments to be continued through three crops to ascertain the actual value of manure to the farmer; and for the management of fine wooled sheep, and preparing their fleece for market; and for long and middle wooled sheep, their management, &c.

In 1849, offers were renewed for experiments on the influence of soil on vegetables, and for gypsum and atmospheric influence on soils; and a premium was offered for an agricultural work on schools.

In 1850, offers renewed for draining and dairies; and premiums for experiments with wheat, showing the comparative earliness, productiveness and profits of different varieties of wheat, &c.; also, for the management of compost manures.

In 1851, offers were renewed for the experiments on wheat, and for management of compost manures; and premiums offered for report on the value of phosphate of lime, as a fertilizer, and for agricultural work.

In 1852, offers renewed for experiments with wheat, for flax cotton, agricultural work, and for experiments in the cultivation of potatoes.

In 1853, offers renewed for experiments with wheat, agricultural work, flax cotton, experiments with potatoes and draining.

The above list will show, that it has been the steady purpose of the different Executive Boards of this society, not to confine themselves to the mere offer of premiums for stock, implements and household manufactures, flowers and fruits, which are deserving of all the encouragement they have received; but that they

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have endeavored to ascertain by reliable experiments, all that knowledge which is desirable and necessary for the farmer to have in relation to the proper and judicious cultivation of his lands, and in the management of dairies and rearing his stock for market.

It is gratifying to refer to what has been already done under the offers which have been made by the society in this direction, showing that many very important and useful articles have been published in the Transactions, which are adapted practically to benefit the farmer, and which in many cases have been turned to great advantage by reading and observing farmers.

While it is to be regretted that many of these premiums offered have not secured experiments, such as were desired, (and it is to be doubted, whether experiments requiring a series of years to perfect them, will be secured without an experimental farm, on which they can be carried on systematically from year to year,) it is still peculiarly gratifying to call attention to what has actually been accomplished.

Essays and experiments will be found in the Transactions, several of them, for which the premiums by the society were awarded, of great value; among them, we allude to the following:

By the late Willis Gaylord, on geology, on tillage, on farm management, on manures, on insects injurious to vegetation, on the analysis of soils.

By J. J. Thomas, on farm buildings, fruits, diseases of wheat, and insects injurious to it; farm management, apple culture and uses, science and agriculture, agricultural dynamics,—(Prize Essay.)

Dr. Asa Fitch, on the Hessian Fly, and the wheat fly, (*midge* and survey of Washington county, currant moths, &c.

Destruction Canada thistle, A. Stevens, (Prize Essay,) and one by S. E. Todd, on the same subject, of value.

Cheese dairying, by Alonzo Fish, (Prize Essay;) and report of Secretary on the same subject. Preparation sandy lands for

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wheat, by Col. E. Cost. On fattening swine, and the value of food consumed from actual daily experiments, by J. Murray Bacon. On the economical use of bones, as a manure, by Professor Johnston, Durham, England. The agricultural uses of lime and marl, by Professor Hyatt. Draining articles, from J. Delafield, John Johnston, T. G. Yeomans, and others. Experiments with long and compost manures, on oats, corn wheat, by W. D. Osborn. Butter dairies, by John Holbert, Horace Clapp, and others. Analysis, Indian Corn, by Dr. Salisbury. Elements of Scientific Agriculture, by Professor Norton. Science as applied to agriculture, lectures, by Professor Johnston. Experiments, thick and thin sowing wheat. Jersey, or Alderney cow, by Col. Le Cotuer. Analysis of the milk of the Jersey, Ayrshire and common cows.

Phosphate of lime, by Joseph Harris, prize essay. Curing and packing of beef and pork, by Prof. George H. Cook, and the value of our own salt as compared with the best foreign; analyses of a great variety of vegetables, by Prof. Salisbury.

Essays on breeding, the various kinds of domestic animals, by H. S. Randall, A. Stevens, Sanford Howard, and others.

In addition to the farm reports by Hon. George Geddes, John Delafield, Rawson Harmon, D. D. T. Moore, B. B. Kirtland, and others of very great value, are the surveys

of the County of	Washington,	by Dr. Fitch,
do	Seneca,	by John Delafield,
do	Madison,	by G. Evans,
do	Essex,	by W. C. Watson,

which are of very great practical value to our farmers.

Trial of plows and implements.

These trials were made at the expense of the Society, and are believed to have been more thorough and of more practical importance to the farmers of our country, than any that have ever before been made.

There are various other reports on fruits, fruit trees, wheat, &c., which furnish a fund of information most valuable, and show,

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that the Executive Committee of the Society have kept steadily in view the importance of seeking for valued and reliable experiments in every direction, that can be useful to the farmer in the field of his operations. The Board feel that it is desirable this should be extended as fast as the funds of the Society will permit it to be done, and should any of our liberal farmers place in their possession the means of conducting experiments, they will most sacredly be devoted to the subject desired.

The premium list of the Society was largely extended in 1851, in accordance with the wishes of the Society, and has been retained to nearly the same amount since, though somewhat diminished the past year. The amount, however, of the entire list was $6,000 and upwards.

It must be obvious to every member of the Society, that, to enable the payment of these premiums, and the annual expenses of the Society, favorable locations for the fairs, easy of access, in the midst of a farming community, where a large attendance can be had, with accommodations, reasonably satisfactory, must be secured. While the engagements entered into by the citizens of the locality, where the fair was last held, have been performed most satisfactorily, and all the affairs, in relation to the exhibition, on their part were promptly closed up during the week of the fair—it cannot be doubted that the supposed difficulty of access (though much more favorable than when the previous fair was held there in 1847) prevented very many from attending, and diminished considerably some portions of the exhibition itself.

The unfavorable weather such as has never before, in the thirteen years of this Society's exhibitions, been experienced, diminished very largely the attendance. Still it is believed, that had the fair been located on the central thoroughfare, this deficiency in attendance would have been far less than it was. The Executive Committee having no other place presented to them, and this having been recommended by the Society, they felt in duty bound to carry out the resolution of the Society.

The result has been that the receipts were little more than sufficient to pay the premiums for the year; leaving the expenses of

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the Society to be provided for out of the permanent funds of the Society.

The Executive Committee, in submitting these facts for the consideration of the Society, desire to call their attention to them, as of no little importance in their estimation, as regards the future operations of the Society.

From the reports of the Treasurer it will be seen, that the receipts from all sources have been $12,684.77, and the expenditures $11,882.09; in Treasurer's hands $802,68, and invested funds $2,000. Plate $371.

B. P. JOHNSON,
Corresponding Secretary.

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Connection of agriculture with free political institutions—comparative position of agriculture in Europe and America—standard of agricultural profits in both countries.

AN ADDRESS

DELIVERED AT THE

ANNUAL EXHIBITION OF THE NEW-YORK STATE AGRICULTURAL SOCIETY, AT SARATOGA SPRINGS, SEPTEMBER 23D, 1853, BY HON. WILLIAM C. RIVES, OF VIRGINIA.

MR. PRESIDENT AND GENTLEMEN:

I should consider it an edifying and not inauspicious circumstance, if I were capable of worthily fulfilling the task you have assigned me, that you have been pleased to summon me from my quiet retreat in Virginia, at the distance of five hundred miles from you, to address my brother farmers of this portion of the Union in one of their great annual assemblies. It is in itself an eloquent proof that no narrow State boundaries, no sectional designation, no "Mason and Dixon's line," oppose a barrier to the sympathies and fellowship of American farmers bound together by the ties of a common pursuit, and through that pursuit devoting their best energies of mind and body to the cultivating, enriching and adorning of a common country.

Nor is it the first time, I may be permitted to say, that a Virginia farmer has had the honor of meeting, in a common and cherished cause, his brother farmers of the North, on the spot where we now stand. Gates and Morgan, with their brave followers, were Virginia farmers when, in the autumn of 1777, on the plains of Saratoga, they fought for the liberties of America with Schuyler, Herkimer, Lincoln and Stark, and the gallant yeomanry they led to battle from the fields of New-England and New-York.

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It was the victory then and here won, with the entire capture of the opposing army, which revealed to the world the irresistable energies and the ultimate and inevitable triumph of American prowess, and led without farther delay, to the conclusion of powerful foreign alliances, of which the effect was only to *shorten* the period of the struggle. That fruitful victory was the work of American *farmers*, for the historian significantly records that it was the necessity of first gathering in their harvests, before they repaired to the field of battle, that alone protracted the fate of the invader to the moment when it was finally decided. Such is the double and noble mission of the husbandman in a community like that in which it is our happiness to live, in peace to till and render fruitful the soil; in war to rescue it from the spoiler and to subdue the enemies of his country.

The scene which now greets our view presents, indeed, a striking contrast to that which our fathers beheld here seventy-six years ago, and of which they were themselves the *magna pars*. No longer the steel-clad warrior rides along the banks of the Hudson, no more the sharp crack of the unerring weapon wielded by Morgan's riflemen on the one side, or the answering fire of the enemy's grenadiers on the other, awaken the echoes of Stillwater and Saratoga. The "pride, pomp and circumstance of glorious war," are this day replaced by the "pride, pomp and circumstance" of a glorious cattle show; and, instead of thirty thousand armed men mingling in bloody strife on the field of battle, we see around us twice that number of the one sex and the other, arrayed in the gay habiliments of peace, and contending in friendly rivalry for the prizes of successful industry "under their own vine and fig tree, and none to make them afraid." Let us thank God, and the noble exertions of our gallant ancestors, that this is our happy lot to-day—that we are permitted to exchange the sword and the spear, for the pruning hook and the plow; and in a better sense to "subdue the earth" for the sustenance and not the destruction of man.

This is the holy and beneficent task which the founder of the universe, when he created the heavens and the earth, assigned to man. When he had separated the earth from the waters under

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the heavens, and commanded the earth to bring forth grass and every living creature after his kind, and the waters to "bring forth every moving creature that had life, and fowl that may fly above the earth in the open firmament of heaven," he invested man with dominion over them all, and bade him be fruitful and multiply and replenish the earth, and *subdue* it. We may say, then, without irreverence, that the calling in which we are engaged, and whose interests have brought us together to-day, noiseless and unobtrusive as it is in its daily walks, is by the express appointment of God.

It is the natural, primitive and universal employment of man. From the day in which our first progenitor was placed by Almighty power and goodness in the garden of Eden, "to dress it and to keep it," and in which "all cattle and every beast of the field, and every fowl of the air," were successively brought before him to be named by him, to that in which each one of us is now busied in the care of our allotted portion of the common inheritance, it has been every where and in all time the chief occupation of the human family. The source of subsistence to all, and supplying the materials for the industry and employment of every other class, it is that on which all other human occupations depend, and without which none of them could for a moment exist.

It is not to be wondered at, then, that agriculture has in all ages of the world, and in all countries, been a primary object of solicitude to the State; and it is a circumstance worthy of remark, that it has ever received the greatest encouragement and attained its highest perfection in those States, ancient and modern, which have been most distinguished by their free institutions, the magnitude of their power and achievements, and the grandeur of their public policy. That one of the states of antiquity, to whom it specially belonged in the language of one of her own poets, endorsed by history—

> Regere imperio populos ———
> ——— pacisque imponere morem
> Parcere subjectis et debellare superbos,

was the one most addicted by her tastes and policy to the arts of rural life, and the most distinguished for her successful practice

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of them. Her greatest generals and statesmen, her chief orators and poets, were farmers; not mere fanciful or amateur farmers, as they are sometimes called, but real, practical, pains-taking, hard-working farmers, as much so, many of them, as the most exemplary of our Genesee or Dutchess brethren here present, to-day.

Cincinnatus, quitting his plow at the summons of the Roman Senate, to lead the armies of the republic to battle, and returning to it with business-like alacrity the moment he had delivered his country from her enemies, was in this but the representative of the prevailing habits and character of his countrymen. Cato, the censor, by his daily labors on his farm, as well as by that knowledge of the art which has come down to us, in his work on the *Res Rustica*, earned the title he bore of the best farmer of his age. Curius Dentatus, whose simple and patriarchal life in the cultivation with his own hands, of his modest and well-ordered farm, inspired the virtuous emulation of Cato, was three times Roman Consul, and twice received the honors of a triumph. Of Regulus it is recorded that he asked leave of absence of the Roman Senate, that he might put his little farm in order, after the neglect it had suffered by his public avocations. Virgil, the prince of Roman poets, as he has been called, could never have composed his immortal Georgics and raised a monument to agriculture, of which no other country or language can boast the equal, if his own training on the banks of the Mincio, in charge of his paternal farm, had not furnished him for the task. Cicero and Hortensius, the great orators of Rome, if not farmers in so sirict and practical a sense, were yet smitten with the genuine love of rural life, and their noble villas at Tusculum, Arpinum and Laurentum, bear testimony to their lively sympathy in the ruling taste of their countrymen. Cicero, indeed, owes his family name to an agricultural plant, in the successful cultivation of which it was the pride of some of his ancestors to have been distinguished, as it was the honest boast of some of the noblest families of Rome, as the well known names of the Fabii and Lentuli testify, to have derived theirs from a similar origin.

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In such and so great honor was agriculture held by the master people of antiquity. If we descend to modern times, we shall find that it has been invariably carried to the highest degree of advancement in those states which are the freest, the most powerful and the most prosperous. Among the nations of modern Europe, the foremost in these respects, undoubtedly is the land of our ancestors; and it is precisely there on the theatre of the Old World, that agriculture has been most honored and most improved. England, I am aware, is generally looked upon as mainly a maritime, commercial and manufacturing power. It was the disdainful remark of her great continental antagonist, prompted, perhaps, as much by hatred and resentment, as by the contemptuous feeling of which he assumed the tone, that she was a nation of shopkeepers. But, much as she has been devoted to the pursuits of commerce and manufacturing industry, and great as has been her success in them, it yet is not these, in their visible and imposing manifestations, if I may speak from my own impressions, which strike the attention and excite the admiration of a stranger, half so much as her agricultural development. It is not the Phœnician opulence and luxury of her cities, neither London, nor Liverpool, nor Birmingham, nor Manchester, much as we hear of them in our every day world, which constitute the genuine titles of her national pre-eminence. It is the Arcadian beauty and fruitfulness of her country, adorned by the skill and taste of the husbandsman, and teeming with the riches which the persuasive hand of rural labor wins from the prolific bosom of nature, that forms her pride and glory.

Britons of every class, in the language and according to the precept of their rural poet, "venerate the plough." A taste for agriculture and the love of country life, are the predominant attributes of the national character. Whether a banker amasses a colossal fortune, or a modest tradesman gets a little before hand in the world, the ambition of both is to be a landed proprietor; and Lord Overstone and Mr. Mechi become equally the patrons and promoters of agricultural improvements. The throne itself obeys the universal passion, and not to speak of the laudable example of the present prince consort, who has established one

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of the best model farms of England, it is well known that our former liege lord and master, George III., affected no title more than that of Farmer George, and that he actually contributed papers for Young's Annals of Agriculture, under the homely name of Ralph Robinson (which was that of his bailiff), farmer at Windsor.

I need not recall the long list of illustious Englishmen and Scotchmen, both commoners and noblemen, from Sir Anthony Fitzherbert, Justice of the Common Pleas in the reign of Henry VIII, and author of the first English treatise on husbandry, to Sir John Sinclair, the friend and correspondent of Washington, and the author of that great work, the Code of Agriculture, who have signalized their zeal and their services in the same favorite cause. But, in glancing at this instructive list, I have been too forcibly struck with the connection between English liberty and the English love of rural pursuits not to venture a single remark on that point. Burke, in his letter to a member of the French National Assembly, in 1791, attributes the ill success of their efforts to found a stable system of constitutional liberty to their never keeping the holy rest of the Sabbath, and never enjoying the quiet of the country. He says, "you never give yourselves time to cool. You never go into the country soberly and dispassionately to observe the effects of your measures on their objects." That sobriety and calmness of mind, without which the grave and responsible duties of freemen can never be properly discharged, I shall not pretend to say is the *exclusive* attribute of the country. But all will admit that the retirement of country life and its remoteness from scenes of excitement are, in a peculiar manner, favorable to the tranquil and undisturbed exercise of the moral and intellectual faculties of man. Of this, Burke himself, was a most striking example, for it is the patriot-farmer and philosopher of Beaconsfield, and not the orator of St. Stephens, that always speaks with the highest wisdom and authority from his immortal pages. But was Edmund Burke, the great orator and statesman, it will be asked, really and truly a farmer? That he was so in the fullest sense of the term, both practically and theoretically, any one who will take the trouble of reading that most

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admirable paper of his, "Thoughts and Details on Scarcity," presented to Mr. Pitt, in 1795, will be thoroughly satisfied. It exhibits a minute acquaintance with all the operations of practical agriculture, and an exactness of observation and detail in regard to his own system of husbandry, which could be the result only of familiar practice during the *seven and twenty years* that he says he had been a farmer. This is a part of the history of that extraordinary man, whose profound political wisdom and magnificent eloquence have been the admiration of the world, that has hitherto attracted but little attention, but which, recalled by the incidental mention of his name, is not unworthy of remembrance here to-day. Indeed I know nothing in the history of the human mind more remarkable than that combination of high philosophy in the most abstruse questions of legislation and political economy with practical sagacious knowledge in the ordinary concerns of human life which the paper in question exhibits; and one rises from its perusal filled with a species of amazement at the compass of the human faculties, and perplexed which most to admire—the farmer-statesman or the statesman-farmer.

If agriculture has been so much honored and cultivated in other great and powerful States distinguished by their free institutions, it must be yet more so in this land of western liberty and progress. In the first place, there is no other country in which so large a proportion of the population, enjoying competence and possessing adequate means for the liberal exercise of the art, are engaged in the labors of agriculture. In England, according to the most authentic statistical returns, somewhat less than one-third of the industrious inhabitants of the country are so employed. In France, on the other hand, where the sub-division of landed property has been carried to a very great extent under the encouragement of positive legislation, as well as the influence of traditional habits, it is estimated that two-thirds of the whole population are actually engaged, or interested as landlords and proprietors, in the pursuits of agriculture.

But great as this proportion is, and accompanied in so many cases in that country with straitened resources, which forbid any general attempt at an improved husbandry, it is yet less than the

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relative number of our own people shown by the latest complete data in our possession to be employed in the operations of agriculture. The full details of the census of 1850, not having been given to the public, we can only refer for information on this point to that of 1840, from which it appears that out of the total population then existing in the United States of a little more than seventeen millions, an effective of 4,629,307 persons were employed in the pursuits of agriculture, manufactures and commerce, and of that number 3,719,951 persons, or 80 4-10 per cent., were engaged in agriculture; 791,749, or 17 1-10 per cent., in manufactures, and 117,607, or 2 5-10 per cent., in commerce. Though these proportions may have varied somewhat since, and will doubtless continue to vary in a greater or lesser degree from time to time, yet nothing is more certain than that for ages to come agriculture must be the chosen occupation of a large majority of the republican people of America. The vast extent of our territory, now stretching from sea to sea, and embracing *twenty-three* degrees of latitude of the temperate zone, from the Lake of the Woods to the mouth of the Rio del Norte, and as yet very thinly peopled, make this, by an irreversible law of political economy, the *manifest*, but peaceful, destiny of a country abounding in cheap and fertile lands, with a rapidly increasing and liberally consuming population at home, and an extending commerce with the rest of the world to absorb its productions.

While agriculture employs and must long continue to employ much the largest portion of American labor, it contributes, also, by its annual products, much the largest amount to the sum of the national income and wealth. The whole annual products of industry of every kind in the United States, in 1840, have been estimated by a learned and ingenious statist,* drawing his conclusions from the document to which I have just referred, at the sum total of $1,063,134,736, of which $654,387,587 was derived from agriculture, $239,836,224 from manufactures, $79,721,086 from commerce, and the balance from mining, the forest and the fisheries combined.

*Professor Tucker in his "Progress of the United States."

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Far be it from me to refer to these statistical details in any spirit of invidious comparison, or for the purpose of derogating in the slightest degree from the relative value and importance of those sister branches of the national industry, which are the indispensable supports of a prosperous agriculture.

It is to manufactures and to commerce that the agriculturist must look to give a marketable value to all that great mass of his productions which is not needed for his own consumption, while at the same time it is by them that are supplied his various additional wants with a promptitude, certainty and economy which enable him to devote his energies without distraction and with the highest effect to his own proper calling. Hence it has ever been found that agricultnre flourishes most by the side of and in reciprocal and spontaneous communion with manufactures and commerce, and no State can be said to be fully constituted in either a political or economical sense, till in the natural progress of things it rests upon the triple alliance of all these arts of social and civilized life.

Feeling then that every propitious breeze which fills the sails of the merchantman, and every profitable waterfall that turns the busy wheel of the manufactory, but imparts a fresh impulse and offers a new encouragement to the labors of the husbandman, I have referred to the comparative statements presented by our official statistics, with no view but to place before you, in its true light as a great *national interest*, the simple and unpretending pursuit in which you are engaged, and which, apt to be overlooked in the isolated and sequestered lives of its followers, can be properly appreciated only by its collective results. Looking at it from this point of view, all must acknowledge, that the mission of the agriculturist in our American public economy, is one of great dignity and importance; and, happily, there never did exist in any country a combination of circumstances more favorable to the highest perfection and development of the art.

Let us for a moment compare his position here with that of the agriculturist of Europe. There are but few States in that quarter of the globe, in which the Feudal system, which succeeded the

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fall of the Roman empire, has not left profound and still abiding traces of its peculiar policy, with regard to landed property. As a consequence of that state of things, this portion of the original inheritance of the human family remains in the hands of a comparatively small number of proprietors.

In England, for example, the actual cultivator and occupant of a farm is very rarely its owner. In ninety-nine cases out of a hundred he is a tenant, frequently for a short term, and sometimes even without the security of a lease. It is not in human nature, under such circumstances, that the farmer should be very solicitous to make improvements, of which the chief benefit may accrue to another; and it is, indeed, wonderful, and a fact most honorable to the tenant farmers of England, that, in spite of this prevailing discouragement and that other oppressive tradition, which, in the shape of tithes, subjects them to increased burthens, in proportion to their skill, industry, and expense in improvements, English agriculture should be what it is.

In a country which is separated from England by a narrow sea, and yet more strongly contrasted national character, institutions and manners, the discouragements of agriculture are of a precisely opposite nature.

There it is not the monopoly but the extreme and unnatural subdivision of landed property, and the diminutiveness of farms, almost to the verge of the infinite divisibility of matter, that oppose the most serious obstacle to the general progress of agricultural improvement.

What would we think, on this broad continent of ours, of a field measuring one and a half yards by two, and a farmer owning and cultivating a single furrow, and that by no means a long one? And yet in Lorraine there are examples of the former, attested by the authority of a grave and respectable French writer (Monsieur Bosc); and in Brittany the common name applied by the peasant to his possession, is *sillon*, or furrow, and it is in fact often nothing more.

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It is estimated that there are about a million and a quarter of proprietors in France, none of whom hold more than two hectares or five acres of land; and dividing the whole area of the country by the total number of proprietors of every grade, the average size of farms is about eleven and a half acres. This inordinate subdivision of landed property, encumbered, too, for the most part, with hereditary mortgages, which have descended with the land from father to son, must, it is evident, in much the larger number of instances, leave neither the space nor capital necessary for an improved system of husbandry. That there are, notwithstanding, examples of high and successful farming in France, is only a proof of the national genius for administrative organization, and the application of science to art, exemplified in a pursuit, where both are so important and so fruitful.

Let us now turn to the happy and privileged position of the American agriculturist. With but rare exceptions he is the owner as well as occupier of the farm he cultivates. It is *his;* and in that single word are bound up instinctive and mysterious associations, which attach him to it with ten-fold power. It is his, and his children's after him. The labor which he bestows upon it is a labor of love as well as interest. Every improvement he makes enures to his own benefit and gratification, and to the benefit and gratification of those who are nearest and dearest to him. This cherished possession, too, is of an extent sufficient to afford the means for its own improvement, as well as the comfortable maintenance of its owner, varying with the circumstances of its locality and the culture to which it is devoted. The proprietor is not tethered, like his beast, to a little spot of earth to browse about, day after day, and year after year, in the same weary and restricted round, for a scanty subsistence. He looks around him with an erect countenance and spirit, and with conscious pride and gratitude on his share of the common inheritance. He has ample space for the full exertion of all his energies of mind and body.

Returning from his daily toil he meets at a board crowned with abundance, as it is prepared with neatness, a joyous and happy family to animate, and, when necessary, to share his labors, and

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over them all a government of equal laws, to secure to each the fruits of his industry and skill, with neither tithes nor poor-rates, nor oppressive taxes, to abstract any portion of his earnings, which he does not freely give.

Let it not be said that there is wanting among us the spirit to improve these propitious circumstances, and to turn them to their highest account. On the contrary, I fondly persuade myself that America, as she is the freest and best governed country under the sun, so is she destined to be the best cultivated and the most highly improved. Is there not a legitimate encouragement to this aspiration in the reflection that he who above all others was the successful asserter and founder of American liberty, was at the same time the most zealous patron and promoter of American agriculture; and, whenever his higher duties to the country permitted, one of its most earnest, faithful and untiring practical votaries?

Let any one who would wish to see how the wisdom, foresight, energy and vigilance which found and administer governments and conduct armies to victory, can find full scope for their exercise in the management and administration of a farm—how the hands "which have held the scale of empire and ruled the storm of mighty war," can hold and direct the plow—let him read the agricultural papers of Washington. Nor was his example without followers among those who succeeded him in the same high post of public trust and authority. The author of the Declaration of American Independence gave the highest proof, both of his scientific attainments and of his devotion to the interests of agriculture, by constructing, according to strict mathematical laws, the mold-board of a plow of the least resistance; and was a candidate before the Agricultural Society of Paris, while he filled the office of President of the United States, for a prize offered by that learned association for the most perfect model of this chief instrument of the husbandman's labors, and actually obtained, if I mistake not, the second prize.*

In an art so complicated as agriculture, and requiring for its successful prosecution the union of science with practical judgment, and of sound theoretical views with discriminating obser-

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vation, the intellectual power of the country, as well as its members, must be largely enlisted to promise the highest success.

In this respect, as in others, the United States have been eminently happy. A career inaugurated by the great names of Washington and Jefferson, and illustrated even in our own time by others whose brilliant renown, now canonized by death, forms the just pride of the country—by the names of Clay and Webster, of Jackson and Calhoun,—has not been slow to draw to its aid talents and attainments of the highest order and of every diversity of character, whether practical or scientific.

But there is one portion of the mental resources of the country more obviously and visibly connected with the operations of agriculture, which it is impossible to pass by unnoticed on the present occasion. I refer to the extraordinary fecundity and ingenuity of the American mind in every species of mechanical contrivance, and especially those intended to economise human labor, and to augment its productive powers. That this is in a peculiar degree an American attribute, is acknowledged by all the world, since in the summer of 1851, you sent forth from your own port the gallant little "America," to give a lesson in naval construction, under the modest and innocent form of a yacht race, to the oldest and most renowned maratime power in the world; and since, in the same summer, at the great London Exhibition, the Virginia and Maryland "Reapers" taught the English farmers how to gather in their harvests with an expedition, economy and completeness, which for half a century they had been attempting but in vain, under the stimulus of a parliamentary reward.

It is hardly possible to form an adequate conception of the immense importance to American agriculture, of this peculiar characteristic of the national genius. Even in England, where human labor is so cheap, it is estimated by the highest agricultural authority of that country (I refer to the present able and distinguished President of the Royal Agricultural Society), that by means of the invention of new implements, or the improvement of old ones, there has been effected, within the last twelve years, a saving of nearly one-half in the expense of all the principal

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branches of English farm labor.* In this country, where labor is so much scarcer and dearer, the extent to which the productive powers of agriculture, aided by the inventive genius of our countrymen, are likely to be yet farther increased by the judicious and more general adoption of labor-saving machinery, as well as by the progressive improvement of agricultural implements in general, is a question of the deepest interest. How dependant the labors of the husbandman are upon the ingenuity and skill of the mechanician is sufficiently apparent from the facts disclosed by the last census, that imperfect as our agricultural equipments in many cases are, there was yet invested in the various descriptions of farming implements and machines in the United States, at that time, an aggregate capital of one hundred and fifty-one millions of dollars.

Associated with the inventive powers of the American mind is another trait of the national character, which has already exerted, and will continue to exert the most favorable influence on the progress of American agriculture. The people of the United States, while they have shown themselves happy and fertile in the origination of new principles and expedients demanded by their particular situation, have been always quick and discerning in the adoption of whatever experience has demonstrated to be good and valuable in the customs and institutions of other countries, and which could be advantageously transplanted to our own.

The American mind is inquisitive and electic, as well as original and inventive. Our political institutions are in a good degree electic, for with much that is wholly original and purely American, devised by the wisdom of our ancestors to suit our peculiar circumstances, there are many things, undoubtedly, which were suggested to them by the example of the ancient and modern republics as well as by the institutions of our fatherland. Our national population is electic, for however common it is to speak of ourselves as Anglo-Saxons, it is impossible to ignore the many other and important elements that enter into the composition of the great American family. So, too, our agriculture is electic,

*See the report of Mr. Pusey, to H. R. H., the President for the Royal Commission for the Exhibition of the works of Industry of all Nations, on Agricultural implements.

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and our farmers are true practical electic philosophers in appropriating and transplanting here whatever the systems of agriculture of other countries, and their improved breeds of domestic animals particularly offer worthy of adoption.

You, yourself, Mr. President, have rendered important services to the country in this line; and I have not forgotten that it was at a great cattle show in England, where you were patriotically employed in making selections of the finest animals of that country to improve our native stock, that I had the pleasure of first forming an acquaintance which is ripened here to-day in our own happy land under the beams of our glorious autumnal sun. Others of our agricultural brethren, of this and other States, have been long and most usefully employed in enriching the country with the choicest results of foreign breeding, and their names, identified with a great national benefit, are "familiar as household words" in the calendar of every American farmer.

I shall be pardoned if, in this connection, I speak of a class of public servants who, in the opinion of many, are a superfluous incumbrance upon the State, or at best "wisely kept for show," but who, from the opportunities afforded by their public residence abroad, have some times had it in their power to introduce new and most valuable branches of husbandry from foreign countries into their own. It was Sir Richard Weston, English ambassador to the Low Countries, who, two centuries ago, introduced from Flanders, the culture of that invaluable plant, the red clover, and the *field* culture of the turnip also, into England. Franklin, fresh from the field of its miraculous effects, made plaster-of-paris speak for itself to the incredulity of the Pennsylvania farmers, by tracing its name upon their grasses in a powder which, in a few short months, sprang up into a vegetable alphabet, that one might run and read. Gen. Humphreys, minister of the United States to Spain, about the commencement of the present century, first made known to us, by a large importation of his own, the value of the merino sheep, which has since been a source of so much riches to this part of the Union; and your own Chancellor Livingston, minister to France, about the same

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time, obtained from the French government and sent to the United States specimens of the famous Rambouillet flock, that may be considered the *germ* in America of those French merinos, which are now attracting such general attention.

Having glanced in a rapid, and, I am sensible, a very imperfect manner, at some of the circumstances in our national situation and history, and also some of the attributes of the national genius and character that appear peculiarly auspicious to the progress of agricultural improvement in the United States, allow me to say a few words on a subject of deep practical concernment to all who are engaged in the pursuits of agriculture—I mean its fair and legitimate returns in the form of profit. Agriculture, as we speak of it here to-day, is not a mere pastime or amusement. It is a branch of the national industry, on which a large majority of the people of the United States rely as their means of support, and of bringing up and educating their families. Like every other branch of the national industry, therefore, it ought to yield an adequate return for the labor and capital employed in it.

An opinion has, some how or other, strangely gained ground, that the agriculturist ought to be content with much smaller profits than those derived from other employments, because he leads, it is imagined, an easier and less laborious life, and his pursuit is supposed to be less liable to hazards and vicissitudes. Whatever poetical views may be entertained of a farmer's life by those who have never tried it, the farmer himself knows that there is no pursuit, well followed, which demands more untiring industry and more ceaseless vigilance, and none more precarious in its results, from the necessary effect of the uncertainty of the seasons on the fruits of his labors. Burke, in the remarkable paper to which I have already alluded, speaking experimentally as a farmer as well as from a wide survey of human life, says that "It requires ten times more of labor, of vigilance, of attention, of skill, and of good fortune also, to carry on the business of a farmer, than what belongs to any other trade."

A famous school of political philosophers, the French economists, have contended, that no kind of labor but that employed

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in the cultivation of the earth, properly deserves the name of *productive*, however useful they may be in other respects, because no other species of industry, over and above the necessary expenses of continuing itself, contributes any new value, as that does in the shape of rent, to the mass of the national wealth. Adam Smith, the great oracle of modern economical science, while denying this doctrine of the French economists, yet maintains, that agriculture is, in its nature, the *most productive* of all the branches of national industry, "adding" to use his words, "a much greater value to the annual produce of the land and labor of the country, to the real wealth and revenue of its inhabitants, than any way in which a capital can be employed." Without going so far as either Adam Smith, or the French economists, the agriculturist may at least claim *equality* with other pursuits, in a tendency to promote the national wealth, and fairly aspire to a measure of remuneration for his labor and capital to be determined by the same rules of proportion and the same principles of equity.

Whether this measure has been yet fully attained in practice to any considerable extent, either here or elsewhere, is, I apprehend, a matter of great doubt. Still the standard of agricultural profit in some parts of Europe, where both skill and capital have been largely applied to the cultivation of land, is, I am persuaded, much higher than is generally imagined. When that shall be made manifest, the American agriculturist, enjoying so many peculiar advantages in his position, will not, I trust, be content to rest in any degree below it.

Edmund Burke, writing in 1795, and in that same representation to Mr. Pitt, which contains so much matter for the instruction of both the agriculturist and the statesman, says, "A farmer in England, who cultivates twelve hundred acres, can not proceed with any degree of safety and effect, with a smaller capital than ten thousand pounds; and he can not, in the ordinary course of culture, make upon that great capital of ten thousand pounds, more than twelve hundred a year." This is a profit of twelve per cent. Sir John Sinclair, twenty-five years afterwards, speaking from reports made to the board of agriculture by farmers in a

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arge number of the counties of England, says, that "the profit of farming on arable farms rarely exceed from ten to fifteen per cent., on the capital invested," which, it is added, are little enough, considering that few employments are more subject to casualties than farming, or require more unremitting attention.*

These profits, too, it must be borne in mind, are the profits of the *tenant*-farmer, after paying rent to his landlord. That the profits of farming in England have not diminished since the time of Burke and Sir John Sinclair, may be safely assumed; and that they are not less on the continent, in all cases where a like system of liberal and intelligent husbandry has been steadily pursued, admits of but as little doubt. The able and experienced director of the model farm of Grignon, in the neighborhood of Versailles,† informed me, a few months ago, that the agricultural profits of that establishment were fourteen per cent; and as it is the property of a joint stock company, and all its accounts are regularly audited at the close of the year, there can be nothing of the vagueness of conjecture in this result.

I have desired to present these facts to your consideration, and to that of our agricultural brethren generally, because I am convinced that much mischief has been done to the cause of American agriculture by the erroneous notion that has so extensively prevailed in regard to the natural and just rate of agricultural profit, and which has placed it by some supposed and inexorable law of the social economy, so much below the profits of other employments of labor and capital—even as low as two and a half and three per cent! The efforts and the energies of agriculturists, have, in too many instances, been *dwarfed* by the influence of this widely propagated dogma. We see how little foundation it has in either principle or experience. In agriculture, as in all other pursuits, industry and skill are entitled to their reward, and, perseveringly exerted, rarely fail to secure it. If the English farmer make his twelve per cent., after paying rent to his landlord, the American agriculturist, who, in a large majority of cases, is his own landlord, and in saving gains his rent, should make yet more.

* See Code of Agriculture.
† Monsieur Bella.

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Let him always keep before him the highest standard of profit, and in proportion to the elevation of that standard, will be the degree and success of his agricultural improvements.

Happily there are living examples in our country to show that agriculture, here as elsewhere, may be made to yield a fair and adequate revenue to those who are engaged in it. Men must be able to live by their calling, whatever it is; and in this age of free competition and active industry, no business that, in the significant language of the day, does not *pay*, can or ought to be long pursued. It is but a poor and puerile ambition to be a proprietor, unless one can make his property avail for his support, and the support, education and comfort of his family. To such of us, therefore, as may not have been equally fortunate in the career of agriculture, it is a great consolation and encouragement to know that there are those, and in every part of our great and happy country (I am proud to say there are such in my own state), who, by their industry and skill, their intelligence and liberality, and a happy combination of science with judicious practice, have achieved the highest success. Their example is a beacon light to cheer and direct us.

One of the most useful offices of state agriculturul societies, such as that over which you, Mr. President, have now the honor to preside, and which has taken so noble a lead in the cause of agricultural improvement, is to make these guiding examples known to all. History has been called philosophy teaching by example. But there is no branch of human knowledge in which so much is taught by *example* as agriculture. The practice of the best farmers, it has been well said by the leading agricultural writer of England,* is the accumulated and varied science of ages. Acknowledging as I do with gratitude and in the most unreserved terms, the obligations of agriculture to professional science, I must yet say that farmers are, in the main, the best teachers of farmers, and that through the medium of agricultural societies and agricultural journals, they have been organized into a great Lancasterian school, in which the system of mutual instruction has received its highest development and most useful

* Mr. Pusey.

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application. And when, in this mutual fraternal school, we shall have learnt from each other the true secret of agricultural success, so far as it depends on human agency—that to untiring industry must be added knowledge, to knowledge a vigilance that looks into every thing, to vigilance a prompt activity, that is ever beforehand with its work and "has no such day as to-morrow in its calendar," to activity a provident and predisposing foresight that "has everybody and everything ready in its place, prepared to take advantage of the fortunate fugitive moment," to foresight an indomitable perseverance that knows no discouragement, but, like that son of the earth who is the true type of the farmer, gains fresh strength from every fall and acquires new vigor in every conflict with difficulties, and to perseverance a sound and judicious liberality that does not withhold expense when it will be returned in abundant production and permanent improvement, remembering "there is that scattereth and yet increaseth, there is that withholdeth more than is meet, but it tendeth to poverty," when we shall have learnt all these indispensable lessons of the farmer's craft, we must not forget, that even with them all the fruits of the husbandman's labors depend at last, for their consummation, on the favor and blessing of Heaven, and that in this, as in holier things, Paul may plant and Apollos water, but God giveth the increase.

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LECTURE ON FLAX:

ITS

TREATMENT, AGRICULTURAL AND TECHNICAL;

DELIVERED BEFORE THE NEW-YORK STATE AGRICULTURAL SOCIETY, AT THE ANNUAL FAIR HELD AT SARATOGA, SEPTEMBER, 1853.

By JOHN WILSON,

Fellow of the Royal Society of Edinburgh, and of the Geological, Chemical and Meteorological Societies of London, and late President of the Royal Agricultural College at Cirencester, etc., etc., etc.

Flax belongs to the order Lineæ in the Natural System, which is equivalent to the order Pentandria Pentagynia in the Linnæan, a small order containing, according to Lindley,* 8 genera and 90 species, which are met with scattered irregularly over the greater part of the world. Europe, North Africa, and North and South America, seem to be its principal stations; individual members, however, are found in India, New Zealand, Australia, and other countries. Its native country appears to be a matter of question amongst botanists, as it is found growing wild in most countries where the physical conditions are suited to its cultivation. The general opinion, however, inclines towards ascribing it to the East. Be that as it may, this disposition to suit itself to such a vast range of soils and climates is of infinite importance to man, as it enables him to avail himself of the advantages resulting from its cultivation to a far greater extent than he otherwise would be able to do. The botanical characters of the order are well marked, and render it easily distinguishable from all others. It possesses 4, or more commonly 5, sepals; the petals are always equal in number with the sepals; the stamens are also equal in

*Vegetable Kingdom, p. 485.

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number, and alternate with them; it has 5 stigmas and an ovarium with 10 divisions, or rather 5 perfect cells, which are separated again by an imperfect partition, extending from its outer wall. In each of these cells is found a single seed of a flattened oval shape, and of a more or less dark brown color—mucilaginous to the taste, and containing a large proportion of a brownish yellow oil, known as linseed oil. This oil is readily obtained by pressure from the seed, the residuum being the well-known feeding substance termed linseed cake.

The members of this order, generally, are remarkable for the tenacity of their fibres, the elegance of their shapes, the beauty of their flowers, which are blue, red or white,* and the emollient and demulcent properties of their seeds. All are harmless, some possessing slight medicinal action, in others, even this is absent. Of these we may cite the Linum Catharticum, a very common weed, whose leaves contain properties of a purgative character, and the L. selaginoides, which is accounted in South America of great use, both as a mild aperient and as a tonic. Probably these properties pervade the whole order, but have not been remarked in the cultivated flax. Several of its members are plentifully met with in this country as weeds; the Linum Catharticum is very common on poor lands in Europe, though I believe it is not found on the American continent; the L. perenne (or Siberian flax), usually on formations containing chalk or lime; the L. usitatissimum on cultivated soils; and more rarely the L. angustifolium, which is met with on sandy and barren pastures, principally near the sea; while the Radiola is well known to all botanists as being met with in moist and boggy places.

Although there are many kinds of flax known to botanists as possessing fibres suitable for textile purposes, the L. usitatissimum appears to be the only one which has been employed in cultivation. Of this Dr. Lindley tells us there are two very different

* M. Brogniart considers that white varieties often exhibit a marked difference in the coloring of the leaves, and suggests that a modification may also exist in the tissues of the stems. M. L. Vilmorin is at present experimenting upon the cultivation of white varieties of flax. So far, he considers the fibre to be of a coarser quality. *Annales de l'Agriculture Française, Fev.* 1853.

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forms,* namely,—1. The L. humile or crepitans (the Springlein or Klanglein of the Germans), a plant somewhat shorter and more inclined to branch than the other, and possessing larger capsules, twice as long as the calyx, which burst with considerable elasticity when ripe; its seeds, too, are both larger and of a paler color. 2. The L. usitatissimum, or true winter flax (Winterlein of the Germans), which has smaller capsules, scarcely longer than the calyx, not bursting with elasticity, but firmly retaining their seeds, which are of a dark brown color. These distinctions do not seem to be very well understood by the growers of flax, though they certainly are of some practical importance.

In the market we frequently meet with this fullbodied light-colored seed, usually the produce of the East Indies, and it is generally considered to be the produce of flax, harvested before the straw was quite ripe; whereas it is the mature produce of a different variety, suitable for spring sowing, and probably having a more rapid growth than the L. usitatissimum or winter flax. In the foreign department of the Great Exhibition of 1851, samples of both were seen in several places. In Austria and Northern Europe, where the winters are severe and the snow lies too long on the ground to admit of early tillage in the spring, the Winterlein is extensively used and sown in the autumn; the summer season being too short and too hot to admit of the successful cultivation of the Springlein. The general custom in Europe as in this country is to sow in the spring, though no doubt in some of the northern districts, where the ground cannot be got ready sufficiently early in the spring, flax could be advantageously cultivated, if sown in the previous autumn.

The important services which flax has rendered to man, have secured for it a record from the earliest times. In the Bible we find frequent mention made of it, both as flax and in its manufactured state as linen; and on various Egyptian monuments the plant and the preparation of its fibres are represented.

In the Book of Exodus† it is noted as one of the principal crops grown in Egypt. Being one of the chief sources whence the

* Encyclop. of Agric.—*Blackie & Co., London.* † Ex. ix., v. 31, 32.

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Egyptians derived articles of comfort and luxury, it was selected by the Almighty for destruction, when he sent the plague of hail as a judgment on that people. From the Book of Joshua* we find that flax was cultivated in Palestine, where it is stated that Rahab used flax to hide the spies sent by Joshua to examine Jericho.

In the history of Samson,† also, reference is made to flax, as being a well known crop. Many allusions are made to it in its prepared and manufactured state, both in the Old and New Testaments,‡ all of which refer to the same plant we now term flax, and which is the same as that known by the Hebrew name "Pishtah," and by the Greek name "Linon."

We have also ample records of its cultivation in the days of Greece and Rome. Columella§ speaks of it as a hurtful crop, which exhausts the land, and which he says "should not be grown unless there is reason to expect a very great crop, and one is tempted by a very great price." Virgil‖ joins it with oats and poppies, and says, "that all these exhaust the soil." Palladius¶ expresses the same opinion. Pliny,** while condemning it as a crop, moralizes over it and asks, "what greater miracle than that there should be a plant, which makes Egypt approach nearer to Italy; that there should grow from so small a seed, and upon so slender and short a stalk, that which, as it were, carries the globe itself to and fro." By this we must infer, that its use, both in the shape of ropes and sailcloth, was well known; and in the succeeding chapters we are informed, that many nations used it, when woven into linen, as wearing apparel. Pliny is the only author who enters minutely into the details, both of its cultivation and subsequent preparation. He speaks chiefly of spring-sown flax. According to the other authors, flax was sown usually in the autumn, in the months of October and November, when eight

* Josh. ii., v. 6. † Judges xv., v. 14.

‡ Prov. xxxi., v. 13—19; Is. xix., v. 9; 1 Sam. 11., v. 18; 2 Sam. vi., v. 14; Jer. xiii., v. 1; 1 Kings, x., v. 28; 2 Chron. 1., v. 16; Ezek. xiv., v. 3; Hos. ii., v. 5—9. and other places.

§ Columella, lib. ii., cap. x.

‖ Georg., lib. i., v. 77. "Urit enim lini campum seges urit avenae."

¶ Palladius, lib. xi, cap. ii. ** Pliny, Nat. Hist., lib. xix., procem.

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*modii** of seed were sown upon the *jugerum*, whereas ten were required for the spring sown; the land having been previously manured. The harvesting and steeping appear to have been carried on much the same as in later times; the scutching was performed by beating the steeped straw upon a stone, with a peculiar mallet, and then drawing it through iron heckles. The tow was of little use, except as wicks for candles. The "boon" or "shove" was used as fuel, and the cleaned fibre was bleached by being watered and exposed in the ordinary manner. He describes Spanish flax as being of very fine quality; and mentions another sort, which was cultivated in Campania, whose fibres were so fine and so tough, that nets were made of them to entangle wild boars, and so hard as to resist even the stroke of a sword:—"I have seen," he says, "these snares of such fineness, as to pass with the ropes at the upper and under side through the ring of a man's finger; one man being able to carry as many of them as would encircle the hunting ground. Nor is this the most extraordinary part, for each strand of them consisted of 150 threads." He relates also, that, in the temple of Minerva in Rhodes, the breastplate of Amasis, a king of Egypt, was found made of this net, each strand consisting of 365 threads. This was taken by the Consul Mutianus to Rome, where it was exhibited at the time Pliny wrote, as a specimen both of fineness and strength of fibre, and also of skill in spinning and twisting yarn. Certainly modern times have nothing to compare with it.

The absence of all agricultural records after the fall of the Roman Empire, leaves a blank in its history until towards the end of the 12th century, when we gather, from papers of that period, that flax was in considerable cultivation in Great Britain, and also in various parts of the continent of Europe. As that country became more settled, and general civilization advanced, the use of linen became more general; and we find that, in 1532, (Henry VIII,) an act of Parliament was passed, requiring that every person occupying land fit for tillage should, for each quantity of 60 acres, sow at least one rood of it in flax each year. This quantity was increased to an acre in 1562 (Elizabeth) under

* The Roman modus was about the same as the English peck. The jugerum was equal to ·618 of an acre.

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pain of a penalty. In 1691 (William and Mary), with a view to encourage its cultivation as much as possible, an act was passed fixing the tithe on flax at only 4*s*. per acre. In 1713, (Anne 12, cap. 16) a bounty of 1*d*. per ell was allowed on the exportation of home-made sail cloth; and in 1806, (George III. 46, cap. 46) a bounty was offered for the importation of flax and hemp from the American Colonies.

These references tend to show that the growth of flax has occupied public attention on both sides of the Atlantic, and would lead us to infer that, although probably the proportion grown formerly was superior to that of late years, still the demand was always greater than the supply.

In England the ratio of difference is increasing rapidly every year, and the question of supply becomes every year of increasing importance to her. The extension of flax cultivation from various causes, has not been so great as the extension of flax consumption, and she is obliged to rely upon the production of other countries for an article for the growth of which her own temperate climate is so peculiarly adapted. By recent returns published by the board of trade, it will be seen that the import of textile fibres (flax and hemp) into Great Britain in 1851, amounted to no less than 2,495,672 cwt. It is to this point that I wish particularly to call your attention, as I find on making inquiries as to the agricultural productions of the United States, that although flax enters largely into the cultivation of some of the West and South-western States, the seed is the only marketable return which the farmer gets, the straw being entirely neglected. Probably some 200,000 to 300,000 acres have been cultivated this year, producing according to the best estimates I could obtain, between 8 and 10 bushels of seed per acre; which, judging from the relative yield in Europe, would give about 1 ton of straw to the acre, or a gross amount of from 200,000 to 300,000 tons.

These amounts, though large, are nothing compared with the immense productive capabilities of those fertile districts. The same obstacles, however, appear to limit them here, as have so prejudicially retarded the extension of flax cultivation in Great Britain. These are "the general opinion that flax is an exhaust-

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ing crop," and "the difficulty of finding a market for it when produced." As regards the first, thanks to the important advances which agricultural chemistry has been making, the question has been entirely set at rest by the true explanations which science places in our hands for them. For the principles involved, I *must* refer you to some of those excellent treatises which have appeared from time to time, both in this country and my own;* at the same time, I would give as a practical illustration, some experiments which were made a short time since, (1852,) &c.

Some experiments were made a short time since, by Dr. Hodges, for the purpose of ascertaining the relative proportions of the produce of flax, and also the distribution of the inorganic matter in them. The flax employed had been steeped in the ordinary way, and was found to contain 1.73 of ash. Of this air-dried straw 4,000 lbs. weight were taken, which produced—

Of dressed fibre,.....	500 lbs.
fine tow, ...	132
coarse tow,.....	192
Of fibre in all,.....	824 lbs.

These products contained—

In the dressed flax,.....	4.48 lbs. of ash.
fine tow,.....	2.08
coarse tow,.....	2.56
Or in the whole of the fibre,..	9.12 lbs. of inorganic matter;

so that 59.08 lbs., which the crop had withdrawn from the soil, remained in the useless portions, while only 9.12 lbs., were carried off in the dressed fibre. If we compare these results with those obtained from the analysis of an acre of wheat, for instance, we shall see that while the flax fibre takes away with it 9.12 lbs. of inorganic matter, the wheat crop, grain and straw together abstract about 365 lbs. from the soil.

The consideration of the second is so mixed up with the question of a good process for preparing the fibre, that it will be bet-

*See also papers on "Analysis of Ashes of Plants," by May. R. A. S. J.

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ter to leave it until I have made you acquainted with what has been done, and is still doing, towards that most desirable end. This concerns the grower of flax directly, as upon this hinges the security of a constant market for his raw produce; for it rarely happens that a farmer can combine successfully the two distinct branches of producer and manufacturer.

In this country, where labor is so costly and so difficult to obtain, it would be quite impossible to adopt on a large scale the hand-pulling process of Europe. It is not difficult to foresee that if flax growing for textile purposes is to be carried out as a system, the same mechanical ingenuity which has already been taxed so largely for the farmer's benefit, will again come to his aid, and will produce a substitute for hand-labor in the shape of a machine, which will do the work as efficiently and at a far less cost than by manual labor. The attempt has already been made by more than one skillful mechanic. Even if no satisfactory machine for pulling presents itself, the *mowing* machines, of which several excellent ones are to be found, would answer the purpose sufficiently well, as on a level surface they would sever the plant immediately above the crown of the root where the fibres commence. In all cases it is desirable that the cut flax be loosely tied up in small sheaves, and set up in the usual manner—not left lying on the ground, by which great injury is sustained.

Flax, fortunately, has a very wide range of soils:* sands, sandy loams, light and heavy clays, gravels, chalk, marls, alluvial soils, peat and reclaimed marsh lands are all seen, under ordinary circumstances, to produce a crop. The sandy loams and the alluvial soils, natural as well as artificial (warp lands), however, ap-

	IRISH.			BELGIAN.			
	1	2	3	4	5	6	7
Silica,	73 72	69.41	64.93	92.78	87.04	91.8	86.47
Alumina,	6.65	5.77	8.97	1.11	1.52	1.22	1.57
Water,	7.57	11.48	8.62	2.03	3.8	1.85	2.92
Organic Matter,	4.86	6.67	9.41	2.74	4.48	3.45	5.78
	Londonderry and Tyrone.			Dussel near Antwerp	Courtrai.	Lakeren.	Ypres.

Prize Essay on Flax, by James M'Adam, jun.—R. A. S. Journal, vol. viii.

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pear to be the best suited to its cultivation. In Ireland, large crops are obtained on peat bogs, lands with a clay substratum. The plant needs an open soil, through which the water may freely percolate, as its roots are of a fibrous nature, and extend laterally and vertically to a considerable distance (2 or 3 feet.) All the conditions required for its successful cultivation are, that the soil be deep, in good heart and in good tilth, well drained and free from weeds; if these exist we may, under ordinary circumstances, expect a good crop. Owing to the rapid growth of the plant, and the consequent shortness of time it occupies the land, it offers many opportunities to the grower, and admits of more changes in the rotation than most of the other farm crops. These rotations vary in every country, and indeed in almost every locality, and must necessarily be influenced materially by the soil, the climate, and the general cultivation in relation to the markets of the district. As these rotations are subject to so many modifications, it is unnecessary to occupy your time with describing them now.* I would only mention that, under ordinary circumstances, it is found that the crop succeeds best after corn, or upon recently broken up ground; and that the crop is not generally so remunerative when it follows turnips, potatoes, or other root crops. The large quantity of organic matter usually applied to such crops, has a tendency to make the flax grow rank; and although a large crop is frequently obtained, the quality is not so good, and the plant is more liable to sustain injury both from wind and wet at the time approaching its maturity.

The mode of cultivation is too well known to need more than a passing observation. The condition and tilth of the soil must be secured,† about two bushels of *cleaned* seed to the acre should be sown broadcast by the hand or by the broadcast barrow; it should then be covered in by a pair of fine harrows, and a light roller run over it, completes the operation. The month of April is the usual time for getting in the seed, but I am much inclined to think,

*See Essay on Flax.—R. A. S. Journal, vol. viii.

† Plowing up the land intended for flax before the winter frosts set in, would be advantageous; both by destroying some of the annual weeds, and by securing a finer division of the soil.

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that flax might be grown advantageously in many late districts, by being sown in the autumn.

After being properly got in, the only care it requires is *weeding. It is important that this be done in a careful and effective manner, as the value of the crop depends materially upon its cleanness.* The harvest operations differ slightly from the usual crops; the proper time is determined by the color of the straw and of the seed. The straw should have assumed a yellow color immediately under the branches; and the seed should, on cutting open the capsule, be of a pale brown color. Flax is always pulled up by the roots; these handfuls are usually laid across each other, and subsequently bound up into small sheaves; these are set up in circular stooks, the butts of each being spread out as much as possible, to allow the air to have free access to them; there they remain until sufficiently dried; they are then either stacked in the field or at the homestead; or the seed is separated at once, and then merely the stem or straw stacked. Many different modes, both of stacking and of separating the seeds, exist; probably the cheapest and most efficient is to pass the straw through plain rollers, which crush the capsule, and let the straw pass through uninjured. The seed is separated from the capsule or "boll" by winnowing, and the straw remains to be stacked in the usual way. Under favorable circumstances we may expect an average crop to produce from 30 to 40 cwts. of straw and 16 bushels of seed to the acre. The crop now becomes divided: the one portion is directly serviceable to the farmer as a valuable feeding substance, or as a marketable produce in great demand; the other, the straw, is comparatively of little value, until it has undergone certain processes, by which its character is entirely changed. These require a series of operations quite different from those of the farm, and, in fact, constitute a distinct branch of the flax industry, intermediate between the grower of the straw and the consumer of its prepared fibre, the spinner. This division of labor greatly benefits the grower, as supplying a constant market for an article which a well organized establishment can dispose of far more beneficially than he could do at home, with imperfect means, and too often imperfect knowledge.

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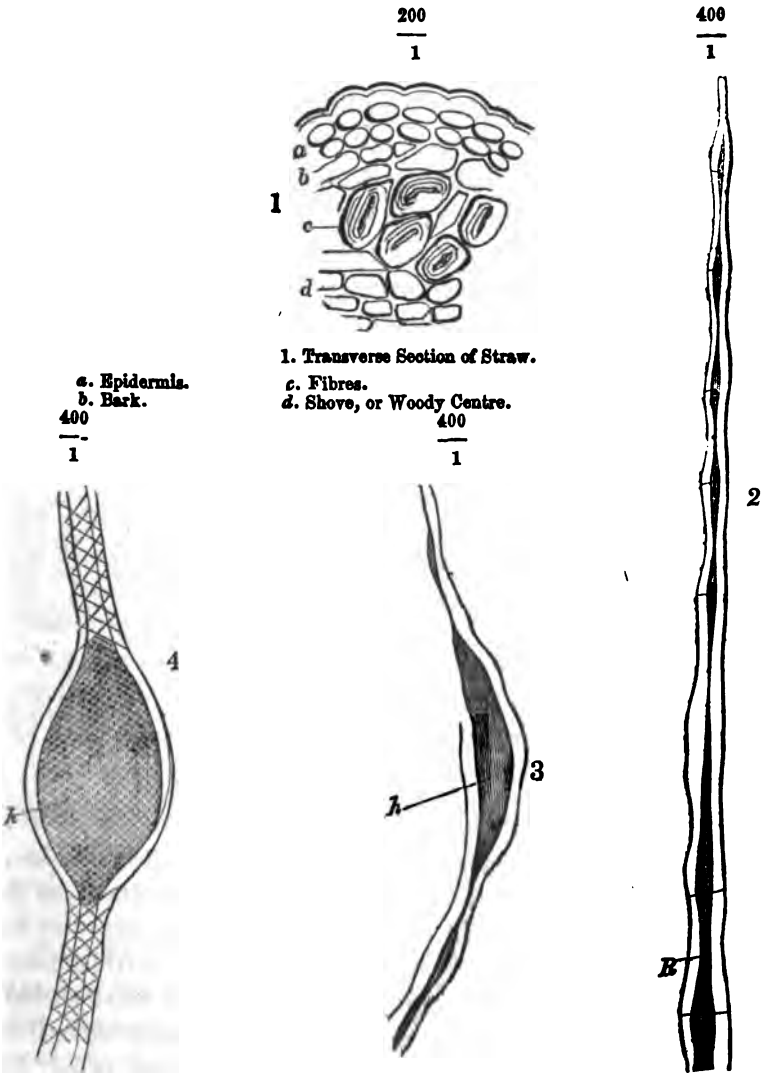
Before describing these various processes, let us consider their object, and the nature or composition of the substance they have to treat. The object may be given in a few words,—the separation of the fibrous from the other portions of the straw. If we take a

Sections of Flax, Straw, and Fibre.



1. Transverse Section of Straw.

a. Epidermis.
b. Bark.
c. Fibres.
d. Shove, or Woody Centre.

2, 3 and 4. Longitudinal Sections of Fibres—*h*, *h*, *h*, Cavities.
2 and 3. Ordinary Cavities.
4. Rarer kind.

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portion of straw, break it, and carefully examine it, it will be found to consist of three distinct parts :—the centre is occupied by a substance composed of a cellular tissue, in appearance like wood; this is usually called the "shove" or "boon;" round this is a tubular sheath, composed of bundles of long and tough fibres, cohering firmly together; the whole structure being cemented together by an azotized compound, and enveloped by a thin and delicate bark and skin. The structural arrangement of the stem of the flax plant is beautifully described by Schacht, from whose admirable treatise, "Die Pflanzenzelle,"* the accompanying plate has been obtained. If a piece of the dried straw be rubbed between the fingers, the bark is immediately removed, and the fibrous portions are more or less readily detached from the woody centre. These fibrous portions being composed of bundles of very delicate filaments, may be split up into almost any degree of fineness, according to the process adopted. Now these various processes differ very much, both in their principles and in their mode of seperating the fibre from the other portions of the plant.

They may, however, be all classed under two heads,—the *mechanical*, in which the operations are conducted in a *dry* state; and the *chemical*, in which *moisture* is more or less necessary. In the first the object is obtained by the various parts being mechanically separated from each other; in the latter the plant itself is disintegrated, either by the action of fermentation, which destroys, or of some solvent, which abstracts, the cementing matter by which its parts are held together.

Of the first but little need be said, as except for rough goods not requiring to be bleached, as canvas, rick-covers, rope-yarn, &c., it could not at present be advantageously used; however, as it costs as much to steep bad straw as good, and the expenses in some such cases exceed the value of the produce, it would appear that the dry or mechanical process may be most beneficially tried when the raw material is of inferior quality,—where there is a difficulty in steeping it properly,—or where coarse fibre only is required. Several modes have, from time to time, been devised

* Physiologische Botanik, Die Pflanzenzelle, von Dr. Schacht. Berlin, 1852.

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for effecting this mechanical separation, of which the following are those most entitled to notice.

In 1812, Lee took out a patent for this purpose, to which Parliament accorded a peculiar privilege, that the time for specification should be extended from 6 months to 7 years. This was shortly taken up by the Irish Linen Board, who expended 6000*l.* in their endeavors to introduce it in the flax districts: one of the machines is still preserved in the White Linen Hall at Belfast. Before the time for specification arrived, another patent was taken out by Hill and Bundy, in 1817, and more recently those by Donlan and others have been brought before the public. On the Continent the same attempt has been made, and with like success. Some few years back M. Christian, ancien Directeur du Conservatoire des Arts et Métiers, at Paris, devised a mechanical process for the separation of the fibre, which appeared to answer well at first, but was afterwards gradually abandoned.

Even in the event of a successful result in the separation, the goods thus manufactured from the fibre are always liable to be injured by moisture, or any other condition that would act upon the azotized substance, which would still remain enveloping and cementing the fibres together.

The second, the *chemical* or *wet process*, must be considered under three different heads:

The first, when the separation is effected by *simple fermentation*, known as "steeping."

The second, where it is due to the abstraction of the azotized extractive compound, by the agency of *chemical solvents*.

The third, where *simply water*, either heated or in the shape of steam, is used. In the first, a destructive fermentation is carried on at the expense of the extractive matter of the plant, and offensive and noxious gases are generated; in the second, this matter is removed by the aid of chemical ingredients, which are costly, and render it of little value; while by the third the whole of the substance abstracted is preserved in a state immediately available,

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and valuable as a feeding substance. The process of steeping is carried on differently in different districts; the oldest is probably that called "dew-rotting," in which the straw is spread out on the grass and carefully watered, so as to supply sufficient moisture to support the action of fermentation in the tissues of the plant. This is a very tedious process, still adopted in some parts of the Continent, and rarely to be met with in Ireland, requiring several weeks for completion, and in dry seasons not practicable at all. The usual method is to immerse the straw, either in tanks or pits constructed for the purpose, or in slowly-running streams. Suitable arrangements are made for effecting this:—In Belgium, where it forms a distinct branch of the trade, wooden crates are made, which are filled with the flax, and then carried into the stream and weighted down; in Ireland and other places where pits or tanks are used, the flax is placed in loose bundles, and kept down by means of planks, or other convenient materials. In a few days a scum appears on the surface of the water, and is succeeded by the evolution of gases in the shape of bubbles, arising from the decomposition now actively at work beneath. Great and constant care is now required that this proceeds not too far, and thus injure the quality of the fibrous portion; it needs constant watching, and removal so soon as the desired effect has been obtained. This is readily seen by the experienced eye, by the manner in which the fibre separates from the shove on breaking a portion of the straw. Great judgment is required in determining the proper time for drawing the flax from the steep; if the process has not been carried far enough, the fibre is coarse and only suited for rough goods; if it is carried too far, the fibre is weak and occasions a great loss upon the heckles. This process, though less tedious than the dew-retting, still requires a considerable time for its operation—in pools or tanks from 10 to 14 days are required; in streams, where the temperature is lower, from 14 to 21 days are consumed. In both cases much depends upon the quality of the water, and upon the general temperature; any impurities, especially salts of lime and of iron, are very injurious; they retard the fermentation and affect the fibre.

These irregularities, both as regards time and effect, produced by the cold steeping, led to the consideration of another method,

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by which a regulated temperature could be obtained, and the time and risk of the old process avoided. The merit of practically employing heated water for this purpose is due to Schenck, who took out a patent for it in 1846, though the principle was not at all new, and had, indeed, been partially applied for many centuries past.

The first rettery on this principle was established in Mayo, in 1848; now there are upwards of 20 at work in the different provinces of Ireland, besides several in England; consuming between 30,000 and 40,000 tons of straw annually. In this the principle of fermentation is the same as in the old process, but is now placed under the control of the operator, who can regulate the action of the steep according to the quantity of the flax, or the article he wishes to produce. An important saving in time is effected; from 72 hours for the fine qualities to 96 hours for the coarse only being required, instead of from 2 to 3 weeks by the old process; and a more regular and certain fibre is obtained.

The temperature of the steep is kept between 80° and 90°, and regulated at will by the attendant. Here, however, we have the same destructive fermentation at work, as in the ordinary steeping; under a certain control, it is true, but generating the same foul and offensive gases. These gaseous exhalations, which far and near stamp the unpleasant proximity of a rettery, have been examined by various chemists, and have been found to consist chiefly of carbonic acid and hydrogen, in nearly equal parts, with combinations of both sulphur and phosphorus with hydrogen.

The fermentation appears to be of a peculiar character, merely traces of acetic acid being found, while butyric acid is generated in large quantities. In fact, the fragrant butyric ether, so extensively used as a flavoring substance, especially in the preparation of "pine apple rum," might readily be collected in considerable quantities from the stinking water of the steeping pools.

At the Belfast meeting of the British Association, last year, an interesting paper was read by Professor Allman (Trinity College, Dublin), "On the Development of the Fermentation Fungus in the Fluid of the Warm-Water Flax Steeps:" in which he gave the details of his examinations of the process of steeping, by

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Schenck's patent. The various phases in the development of the minute organism constituting the fermentation fungus, were described, and which he found to be analogous with those noticed in the fermenting state of other albuminous liquids. By putting some of them into flax-vats, where the fermentation was not commenced, it is very much accelerated; and he suggested the question as to whether or not it would be advantageous to apply the principle practically to the process of steeping. In new vats it is always found that the fermentation is not set up so readily as in old ones, which may be accounted for by the fact, that some of these cells formed previously, adhere to the wood, and thus act at once upon the fluid when placed in the vat. This suggestion of Prof. Allman has been adopted, and found to succeed. Some years ago a method of accelerating the steeping process was in operation on the Continent, where common *yeast* was employed, the flax being placed in shallow tanks and carefully watered.

In some comparative experiments which were undertaken by the Irish Flax Improvement Society, in 1850, the following doubts as to the hot water process were specially investigated, and reported upon:

1st. That the yield of fibre would be less than by the ordinary method.

2d. That the fibre so prepared would be weakened.

3d. That the linen made from it would not bleach properly.

In reference to the first objection, the committee reported that their experiments showed that the uniformity of temperature had the effect of increasing the yield of fibre. In one experiment, conducted at Lisbourn, by Mr Davidson, 112 pounds of flax straw, after being steeped and dried in the usual way, gave 20 pounds of scutched fibre; while 112 pounds steeped by Schenck's process gave 24 pounds. In another 112 pounds of straw, cold steeped, gave 14 pounds 5 ounces dressed fibre; whereas the same quantity of straw yielded by the hot water process 17 pounds 11¼ ounces. The increased yield in the first experiment was 20 per cent., and in the second 23½ per cent., in favor of Schenck's process. As respects the second objection, the result

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was equally favorable. In the first experiment, the flax steeped in the ordinary way spun 96 lea yarn, and that by Schenk's system to 101 lea yarn. In the second, the cold-steeped gave 60 lea, and the hot-steeped 70. The third objection was submitted to an extensive bleaching firm, whose evidence in favor of the hot-water process was very decided. The Committee concluded their report by stating their belief, that all reasonable objections had been fairly and satisfactorily met.

Other experiments, on a large scale, confirm their opinion. In ten comparative experiments, made with nine different sorts of flax, it resulted that the average produce of 1200 lbs. of flax-straw gave 144 lbs. of dressed fibre in the hot-steep, and only 118 lbs., when steeped in the old way.

Dr. Hodges, in a paper read at the British Association Meeting (1852), gave a statement, extracted from the returns of the Cregagh rettery (Schenk's patent), of the changes which 100 tons flax undergo, when treated by this process.

100 tons of dried flax-straw yield—

1st. By seeding, 33 tons of seed and husk; leaving of seeded flax 67 tons.

2d. By steeping, 67 tons of seeded flax, yield of steeped straw 39·5 tons.

3d. By scutching, 39·5 tons of steeped straw, yield of dressed flax 5·9 tons.

Of tow and pluckings 1·47 tons.

This process is so simple, and the advantages over the old method so manifest, both in respect to time, quantity, and quality of produce, that it is somewhat remarkable, that, notwithstanding the knowledge which existed of the value of temperature, in respect to fermentation, even in reference to flax itself, it has only quite recently been practically employed. In looking back we find that in 1787 great interest was excited in Ireland, by a plan to immerse flax in scalding water—a large portion of the vegetable matter was extracted, and fermentation was more readily set up.

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In India, the practice of partially steeping flax and other similar fibres in hot water, has existed for many centuries past. According to Dr. Campbell, at Bencoolen, the process followed is to steep the hemp in warm water, in which it is allowed to remain for two or three days. In the presidency of Bengal, at Rungpoor and other places, the same practice exists; which appears also to have been followed by the Malays, for a long time past.*

An old German process, termed "Molkenrost," in which the flax is steeped in sour whey mixed with warm water, is well known to generate a quicker fermentation, and to produce the finer qualities of fibre. In this the advantages appear to be threefold: the temperature of the mixture is favorable to fermentation, which is assisted materially by the nitrogenized compound (the caseine) of the milk; while the solvent powers of the lactic acid probably aid, generally, in the disintegration of the straw and the more perfect separation of the fibre. The relation between temperature and fermentation was very clearly shown and described by Hermstaedt, whose experiments in reference to the chemical principles involved in steeping flax and hemp were conducted at the commencement of the present century.

Many plans have been devised for dissolving out the azotized extractive matter of the straw, by means of chemical solvents, both acids and alkalies, and thus doing away with the tedious and noxious process of steeping. Both weak acid or alkaline solutions appear to a certain extent to have this property. These are also rendered more effective by an increase of temperature. Recently, about two years since, the attention of the public was called to a process patented by M. Claussen, both in Europe and in the United States, in which an alkaline solution was employed for effecting the preparation of flax fibre in a peculiar manner. The attempt itself, however, to cottonize flax has been discovered to be really no novelty; inasmuch as, in 1775, Lady Moira prepared both flax and hemp fibre in the same manner; the detailed particulars of which are given in the Transactions of the Society of Arts for that year. Specimens of the "flax cotton," and of the fabrics woven from it, are still preserved in the Museum of

*See Jury Reports, Class 4, p. 96. Gt. Exhibition, 1851.

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that Society, and are remarkable for their beauty and permanence of color. Previous to Lady Moira's experiments, which were conducted on a considerable scale, and only relinquished because she could not get any one to take the process up and continue the manufacture, the action of alkalies on flax fibre had been described by Lilljikreuses and Palmquist, who, in 1745, had made use of a solution of caustic potassa. In 1777, Baron Meidingen proposed the use of alkaline solutions for the purpose of *cottonizing* flax, and in 1780, a factory was established at Berchtoldsdorf, near Vienna, for carrying this process into practical operation; and similar methods were also brought forward by Kreutzer in 1801, by Stadler and Haupfner in 1811, by Sokou in 1816, and subsequently by several others. At Berchtoldsdorf, not only was the flax fibre made use of for the preparation of "flax-cotton," but a good article was obtained from the tow and refuse fibre. And the same is said to have been done by Haag, near Presburg, in 1788, by Gobelli, in 1803, and Segalla, in 1811.

For some cause or other, none of these various attempts seem to have been persevered in for any length of time. Either they failed when tested commercially, or the opposition of old established interests and prejudices, seem to have been too powerful for them; for Beckmann, who speaks of its introduction near Brunswick, states that the work-people determined not to use the new material; though at the same time, he observes, that excellent fustians were made from it, which could not be distinguished from those manufactured from the ordinary cotton. The similarity of this prepared flax to common cotton was remarked by Des Charmes, in 1799, and subsequently the subject received considerable attention from Gay-Lussac, Berthollet, and others, whose investigations included the action of both hot solutions of acid and alkalies separately, and also by alternate immersions. Berthollet, in his Book on Dyeing, describes a process very similar to the one patented by M. Claussen, and which, from the curiosity of the coincidence, may perhaps not be found out of place if transferred to these pages. It runs as follows:—"A mode has been discovered of giving to the dressed hemp, and even to the tow a division and fineness which qualify it for the same spinning processes as cotton; so that with this preparation alone, or mixed

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with cotton, stuffs may be made which have a much more considerable value than those of hemp in its natural state. It may likewise be mixed with silk, wool, and even hair; and the yarn resulting from these different mixtures furnishes, in its numberless variety, materials for new trials interesting to the arts and to general manufactures. The process consists of the following operations:—

"1. The fibres are covered with water, and left in it for three or four days; after which they are boiled in simple water.

"2. They are treated with a ley, and then passed into the oxygenated muriatic acid; operations which should be repeated alternately, four times.

"3. The fibres are now transferred into a bath of water charged with $\frac{1}{100}$th of sulphuric acid, and left in it for half an hour.

"4. The fibres, when taken out of this bath, are washed very carefully, and plunged in soap water. They are then stretched out, without wringing, on hurdles, and left to dry."

Amongst other observations upon the process above described, Berthollet remarks that "whether the finest flax or the coarsest hemp-tow be employed, filaments equal in their fineness and whiteness are obtained."

Giobert, in his "Bibliot. Ital.," vol. ii., gives some extended and exact observations on Berthollet's process, and he states them to be "the result of operations on a large scale, which have brought into the market cottony cloth, and bales of this hemp cotton, which were not distinguishable from ordinary cotton;" from which it appears that great attention has been paid to the subject, and considerable expense incurred in the experiments. More recently, in 1842, M. Rouchon, of l'Ecole Polytechnique, at Paris, devised a method for preparing flax by means of immersion in a weak acid solution for a short period, and then placing it in a mass kept moist by occasional arrosions. These were repeated daily until the desired effect was produced. The flax was kept tied up in small bundles, and a man and a boy could attend to two tons per day. This process is still carried on by Messrs.

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Bisson and Pradet de St. Charles. The use of chemical solvents has the advantage of effecting a great saving of time as compared with either the cold or hot process of steeping, and of being carried on without its unpleasant accompaniments. From *twelve to twenty-four hours are now sufficient*, instead of the *three or four days by the hot-water steep*, and *the two to three weeks by the ordinary processes*. The practice, however, is not likely to gain ground, as the ingredients are expensive, a portion of the products rendered useless, and the fibre liable to be injured unless proper care be taken.

We now come to the third division of the processes due to chemical agency, where *simple solvents*, as *water*, *either heated or in the shape of steam*, *is alone made use of*. This is a very important advance upon any of the old methods,—the tediousness and irregularity of the steeping process, whether cold or hot, with its noisome accompaniments are avoided,—no expensive chemicals are required,—the chance of injury to the fibre is lessened,—and the whole of the products of the operation are rendered valuable to the manufacturer. This method of treating flax was patented by Watts, of Glasgow, in the middle of last year, and was shortly afterwards carried into operation on a large scale at Belfast. Its simplicity and effectiveness were speedily recognised; and already several other establishments are in progress in different parts of the country. The whole arrangements required, are inexpensive, and occupy but little space. The straw is placed in a steam-tight chamber, of a suitable size and shape, the top being formed by an iron tank containing cold water, and the lower end having a perforated false bottom at about 12 inches from the other. Steam at a low pressure is then blown from a boiler, through a pipe into the steaming chamber, and passing up through the straw, comes in contact with the iron top, by which it is condensed; then, trickling down the spikes, fixed there as points of dispersion, through the mass, it passes through the false bottom, carrying with it the extractive matter thus dissolved out of the straw, and is drawn off by a waste pipe into a vessel or tank below, in which it is preserved for use as a feeding substance. This is continued for from 10 to 12 hours. The straw is then removed,

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and is passed through four sets of smooth rollers, which squeeze out about 80 per cent. of the water, and at the same time crush the stems, breaking up the central woody core or "shove," and materially assisting its subsequent separation from the fibre. From these rollers it is carried to the drying house, which is heated by steam-pipes from the boiler, and thence to the scutching frames, where the operation is performed more rapidly and efficiently than when the flax is prepared by the ordinary method, owing to the thoroughly crushed state in which it comes from the rollers. The flax is then ready for market, having passed through the *whole process, from the raw material to the prepared fibre, in the short space of about* 36 *hours.*

The importance of this process to the flax interest generally was immediately recognised by the Flax Improvement Society of Ireland, and a committee of investigation appointed to institute "*a careful and extensive series of experiments, with a view to compare it, both in a practical and financial point of view, with the modes of hot and cold steeping generally practised.*" The Committee made their report on the 3d of November last. The experiments were personally superintended by the Committee, and flax of ordinary quality operated upon, of which 10 cwt. 1 qr. 21 lbs. was taken and placed in the steaming chamber, when it was submitted to the action of steam for about 11 hours. After steeping, wet rolling, and drying, it weighed 7 cwt. 0 qrs. 11 lbs., and on being scutched the yield was 187 lbs. of fine flax, and of scutching tow 12 lbs. 6½ oz. fine, and 35 lbs. 3 oz. coarse. The yield of fibre in the state of good flax was therefore at the rate of 18 lbs. per cwt. of straw, or 26¼ per cwt. of steeped and dried straw. The time occupied in the process up to scutching was 24¼ hours; the scutching by 4 stands occupied 6 h. 16 m. In this statement, however, owing to some derangement in the drying apparatus, the time required for that is not included; but the Committee considered that 36 hours would include the time necessary in a well-organized establishment to convert flax straw into fibre for the spinner. The cost of all these operations in the experiment, leaving out the drying for the reasons stated, appeared to be under 10*l.* per ton of clean fibre for labor, exclusive of general expenses. The valuation of the samples varied from 56*l.* to 70*l.*

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per ton, according to the quality of the stricks of fibre sent; and the yield on the heckles was considered quite satisfactory. *The report throughout was very satisfactory.*

Here, then, we have a process which presents the following advantages over the ordinary methods:

1. Great saving in time.

2. Economy of fibre.

3. Avoidance of any nuisance, and beneficial application of waste products.

Dr. Hodges, to whom the steep liquor was submitted for examination, found that one gallon, evaporated to dryness, gave

Of organic matter,	353·97	grains.
inorganic do	161·49	do
Total extractive matter,	515·46	do

The organic matter afforded on analysis—

Of nitrogen, ... 17·79 grains.

The inorganic matter possessed the following composition:—

	Per cent.	Per gallon.
Potassa,	27.17	44.63
Soda,	3.18	5.12
Chloride of Sodium,	21.58	34.61
Lime,	5.91	9.49
Magnesia	4.60	7.40
Peroxide of iron,	.83	1.33
Sulphuric acid,	15.64	25.11
Phosphoric acid,	5.66	9.01
Carbonic acid,	12.43	19.96
Silica,	3.00	4.83
	100.00	161.49

The taste and smell of the liquor very much resembled that of hay, and when poured over the crushed "bolls" or chaff, it was readily codsumed by cows and pigs, who appeared to thrive on it.

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No purgative effect had been noticed, while its nutritive properties were estimated as fully equal to distillers' wash.

No sooner, however, had the spinners given their testimony in favor of Watts' fibre, than another process was patented by Buchanan, also of Glasgow, which appears to be an *improved application* of the *same principle* as Watts', for the solvent power is clearly not due to the steam as made use of by him, but to the hot water occasioned by its condensation.

In this the steeping is effected by *repeated immersions* in a tank of heated water, arrangements being made by which the temperature is never allowed to exceed a certain degree—a point of great importance, both as regards the abstraction of the azotized extractive matter, and also the quality of fibre produced. It is well known that albuminous solutions, containing even a very small proportion of albumen (1 in 1000), coagulate at a temperature of 180°, and then become insoluble; and it is always considered that fibre is more or less injured if exposed beyond a certain high temperature. These two important points have been taken advantage of in Buchanan's process; the temperature of the steep liquor is kept within a certain range of temperature, and the operation, both as regards time and produce, more satisfactorily performed. The process is quite *automatic*, thus saving labor and the risks consequent upon carelessness; and the mechanical arrangements by which it is effected are very simple and inexpensive. The accompanying diagram will, I hope, make the process clearly understood. The flax straw is placed in an open vessel (No. 3) termed the steeping vat, having a false bottom (*i*); a boiler (No. 1) generates the steam required; and between these two is placed a suitable vessel, (No. 2,) the condenser, of about the same capacity as No. 3, and communicating with that by the hot-water pipe (*b*), and with the boiler by the steam pipe (*a*). This centre vessel or condensing chamber is filled with water from the cistern (No. 5), and steam is then blown in from the boiler. When the latent heat of the steam is absorbed, and condensation no longer takes place, the hot water is driven over into the steeping vat, and completely immerses its contents. The overflow pipe (*c*) then conveys a portion into the bucket (No. 4), which, overpowering the

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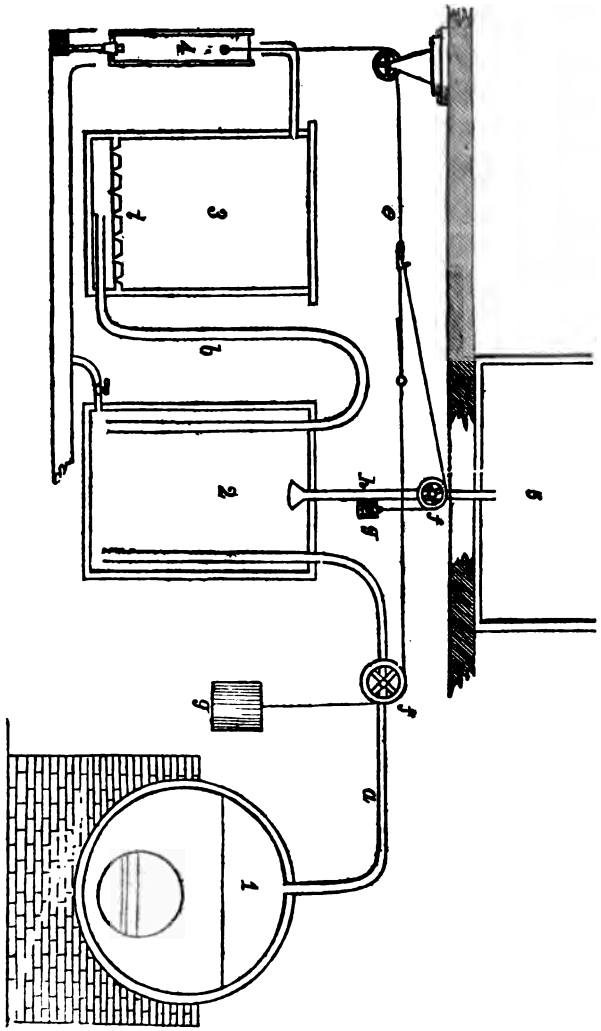
balance weights (*gg*), descends, drawing the chain (*ee*), which, being attached to the pullies (*ff*) fixed on to the cocks of the steam pipe (*a*), and of the condensing pipe (*h*), reverses their action by cutting off the steam and turning on a charge of cold



water into the condenser. The steam in No. 2 is then rapidly condensed, and the liquor drawn back from the steep vat into which it had previously been forced. This completes the operation of immersion, which recommences immediately: for as soon as the overflow bucket (No. 4) has reached a certain point in its

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descent, it strikes against a pin, having a screw adjustment, which causes the valve (*d*) at the bottom to open and discharge its contents into the discharge pipe (No. 6). The bucket, then relieved of its load, resumes its original position, the balance weights (*gg*) act on the pullies (*ff*), which again reverse the cocks, cutting off the cold water sparge, and turning on the steam to No. 2. This is repeated as often as may be required.

So far as the experiments have gone, it has been found that by ten such immersions the whole of the coloring matter of the flax has been removed. These in practice would not occupy more than three or four hours. This, however, is subject to the test of the operations on a commercial scale which are now in progress in Scotland for carrying out the patent.*

By this process we have all the advantages obtained by Watts—economy of products—*increased economy of time, only four hours being required instead of twelve*—and, in addition, *great economy of labor*. Another great improvement is claimed by Buchanan, his method of drying the steeped straw preparatory to scutching. This is usually a tedious and costly process as regards labor and arrangements. The fibre, too, is to a certain extent liable to be injured by the necessary handling. The ordinary mode is to place the flax thinly spread between two wooden laths, which, when closed by means of hooks or rings over their ends, firmly hold the stems: about fifty-six of these are required for a cwt. of flax. They are then carried to the drying shed and suspended from frames, where they remain exposed to the action of the air until they are dry. The time required depends on the weather—from three or four days to as many weeks. In Watts' process, where steam is available, the process of manipulation is the same, but the drying is effected in a heated chamber in a much shorter time. *Buchanan's method is entirely different.* He proposes to effect the desiccation in the same vat in which the flax was steeped, by means of *dry warm* air, which is driven through it in unlimited quantities, at a very little expense. The air is readily obtained in

* The patent for the United States will be carried out by the American Flax Company, of which Mr. Thomas Kimber, Jr., of Philadelphia, is the managing director, to whom all applications in reference to it should be made.

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the desired state by causing it to pass through *porous earthenware* pipes set across the lower part of the chimney, which while heating the air, deprive it of its moisture. These communicate on the one side with a blower driven by the engine; and on the other side with a pipe which conveys the heated air to the lower part of the vat containing the flax to be dried. This is all the arrangement needed. The blower drives the air through the earthenware pipes; its temperature is there raised, and moisture abstracted, and entering the bottom of the steeping vat, it comes in contact with the flax and passes through it, absorbing and carrying off the moisture, and leaving the flax in a perfectly dry state. It is then ready to be rolled and scutched. The patentee's experiments induce him to believe that by this process the entire operation of converting the straw into dressed fibre may be effected in the working day, or twelve hours; and, from the simple nature of the mechanical arrangements and of the materials required, a very moderate outlay would suffice for the formation of an establishment equal to the probable produce of a given district. The steeping process being entirely automatic, the cost of labor is very small indeed, and the whole expenses of the operation materially reduced.

In speaking of the treatment of the flax by these different methods, I have only referred to it in a dried state, harvested and treated in the usual way. It is not, however, necessary, that it should always be so: it is usually more convenient, it is true, where large quantities are to be operated upon; but where the quantity is small, and can be worked up at once, or at the commencement of the steeping season, immediately following the harvest, it would appear from the following comparative experiments, that steeping it, when green, is the most advantageous. M. Dufermont, cultivateur à Hem (departement du Nord), found that when the flax was used green, the steeping (by the old process) only required from six to seven days; and that six days grassing gave the flax a finer color than could be obtained by any other means. It was dried and ready for scutching in three weeks; whereas the ordinary time in the district averaged from 1 to 1½ year. He found also that it yielded 5 per cent. more

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fibre, which was worth fully 10 per cent. more money in the market. The flax was pulled before it was quite ripe, the seed-bolls removed by rippling, and the straw immediately placed in the pits. The seed, however, was reduced about 2 francs, per hectolitre in value. The details of the experiments he gives thus:*

FIRST EXPERIMENT.

—	Value.	Original Weight.	Dried.	Steeped and Dried.	Scutched.	Value per Kilogr.	Value of Seed.	Gross Value.
	Francs	Kilogs.	Kilograms.	Kilog's.	Kilogr's.	Francs.	Francs.	Francs.
Green Flax,	222	4·030	..	826	191	1·70	27	357·70
Dried "	222	4·030	1·142	178	178	1·55	31	305·90
						Difference,.....		45·80

SECOND EXPERIMENT.

Green flax,..	6·05	100	.....	26·000	6·350	1·90	....	12·06
Dried "	6·05	100	Grammes. 30·250	22·500	5·500	1·65	....	9·07
						Difference,.....		2·99

The practice of steeping green is carried on to a large extent in the Waes district in Belgium.

Such is a sketch of the different methods of making this substance; their variety, both in principle and practical application, give ample evidence of the value which has always been attached to it, in relation to the necessities or comforts of mankind.

Flax has ever occupied a prominent position in the agriculture of civilized countries. In Great Britain, we have seen that the government of early times encouraged its cultivation by special bounties. This policy was pursued up to a more recent period—nay, it even now is to a certain extent continued.†

Notwithstanding this encouragement, the supply has never been equal to the demand, and each year's imports show us the very large sums which England annually contributes to the farmers of other countries, for an article of produce especially suited to

* Annales de l'Agric. Française, Mar. 1853.

† 100*l.* per annum is granted to the Flax Improvement Society, by the Government, in accordance with the Act 11 and 12 Vic., cap. 115.

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her own, and which on all hands is now acknowledged to be, under fair management, a paying crop. Her imports of dressed fibre (flax and hemp) average, for the last ten years, 70,000 tons per annum; for 1851 they were 124,784 tons, showing an enormous increase; this at 40*l.* per ton, would amount to £4,991,360 sterling, or nearly 25 millions of dollars for these two articles, which could be entirely supplied to her by the United States.

Besides this large amount for fibre, she requires annually a supply of 650,000 quarters of linseed, to be used as seed for crushing purposes—this requires an outlay of about 1,500,000*l.* sterling, which goes principally to Russia and the northern ports. This country at present does not supply her own demand for linseed oil, as large imports of seed are made every year from the same sources. The cake, however, the residuum of the pressed seed, so valuable as a feeding substance for cattle, is exported in considerable quantities to England, and forms a portion of the large supply which she draws annually from other countries. This averages about 75,000 tons, and amounts to about 500,000*l.* Thus a market already exists in Great Britain for all the surplus flax produce, whether in fibre, seed, or cake, which the United States will have to export for many years to come. The produce of 600,000 acres is required to supply the demand of the united kingdom; while in Ireland, during the past year, only 136,000 acres were cultivated in flax, and probably not a fourth of that quantity in the rest of the kingdom.

Having brought my subject through the first period of its technical history, the preparation of the fibre, I may perhaps be permitted to say a few words on the state of the flax industry generally in Great Britain, and in those countries where the flax industry is most fully developed.

In England, in 1851, the Factory Inspectors' Report gives the number of spindles at 265,568; in Scotland, at 303,125; and in Ireland at 500,000: forming a total number of 1,068,693.* In France we find the number of spindles to be about 350,000; the establishments being situated chiefly in the departments du Nord,

*The report for 1852 shows a slight increase.

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Calvados, Finisterre, and Pas de Calais. In Belgium there are about 100,000 spindles in operation; the factories being at Ghent, Liège, Tournai, Malines, and Brussels. Holland possesses only one factory, of about 6,000, in Friesland. Russia has two large factories, one at Alexandrofsky and the other at Moscow, together numbering about 50,000 spindles. Austria possesses eight factories, with about 30,000 spindles in operation. In the states of the Zollverein about 80,000 are estimated to be in use; and in Switzerland there are three or four small establishments, making between them from 8,000 to 10,000 spindles. In the United States twelve small factories exist, having in operation about 15,000 spindles; these are situate in the states of New-York, New-Jersey, Pennsylvania and Massachusetts. The consumption of flax worked up by these spindles averages about 25 tons per 1,000 spindles per annum for fine yarns, and about 30 to 50 tons for coarse yarns.

Now, reckoning the average cost of buildings, machinery, and motive power at 90*s.* per spindle throughout, it would appear that there is altogether a *fixed* capital of upwards of 8,000,000*l.* invested in the trade, of which sum 5,000,000*l.* belongs to Great Britain. Notwithstanding these large returns of machinery in operation at home and abroad, we find that the hand-spun yarn very far exceeds it in quantity, since throughout the Continent hand-spinning is still carried on to an enormous extent.

In England the manufacture of linen has increased from 45,000,000 yards in 1805 to 110,000,000 yards in 1850, notwithstanding the enormous development of the cotton industry during that interval. Her exports, too, testify to the position she occupies in foreign markets. In 1850 these amounted in the aggregate, for yarns, thread, small wares, and woven goods, to 4,828,994*l.*; in 1851 to 5,058,822*l.*; and in 1852 to 5,356,871*l.* Of the woven goods exported, the markets of the New World take the greatest proportion; those sent to the Eastern Hemisphere being of trifling amount in comparison. From returns recently published we find that 39,000,000 of persons in America consume annually more than 2 yards of her linen per head—equal to 1*s.* 3$\frac{5}{8}$*d.* sterling; in

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Canada the proportion is 1*s.* 6½*d.*, or nearly 20 per cent. more than in the United States; while 228,000,000 in Europe take but 1-38th part of a yard per head. This remarkable difference does not arise so much from the consumption being proportionally less in the countries of the Old World as from the comparatively high duties which most of them maintain on the import of linen goods, and from the small disposition to use them in Asia and Africa, where cotton fabrics are almost exclusively used.

In conclusion, I would merely recapitulate the points which appear to me most worthy of your attention, and which I have endeavored to support by the evidence I have been able to lay before you. They are—

Firstly. That flax is not an exhausting crop; that its peculiar suitability to different soils and climates, the short period it occupies the soil, and the market returns of an average crop, render it a valuable addition to the ordinary rotations.

Secondly. That the recent improvements in the process of treating flax, whereby the fibre is prepared at an *immense saving both in time and labor*, *all nuisance avoided*, and the *waste products beneficially utilized*, offer great inducements for the establishment of small factories in suitable districts; thus directly encouraging an increased cultivation by insuring to the grower a ready and constant market for the produce.

Thirdly. That a large breadth of flax is annually sown in the United States of which the seed only is rendered available as a market produce, the straw being only used to a very limited extent for the preparation of fibre, the rest remaining on the field or being carted home for rough litter.

Fourthly. That a very large sum, about 14,000,000 to 15,000,000 of dollars, is annually expended by the United States in the purchase of linen goods from Great Britain, which country is obliged to procure the raw material for their manufacture from other countries with which the United States has no commercial relations.

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Fifthly. That it would appear expedient that the United States should utilize the large quantity of flax straw already grown, and increase her production sufficiently at all events, to supply the quantity in a manufactured state which she requires for the consumption of her own population.

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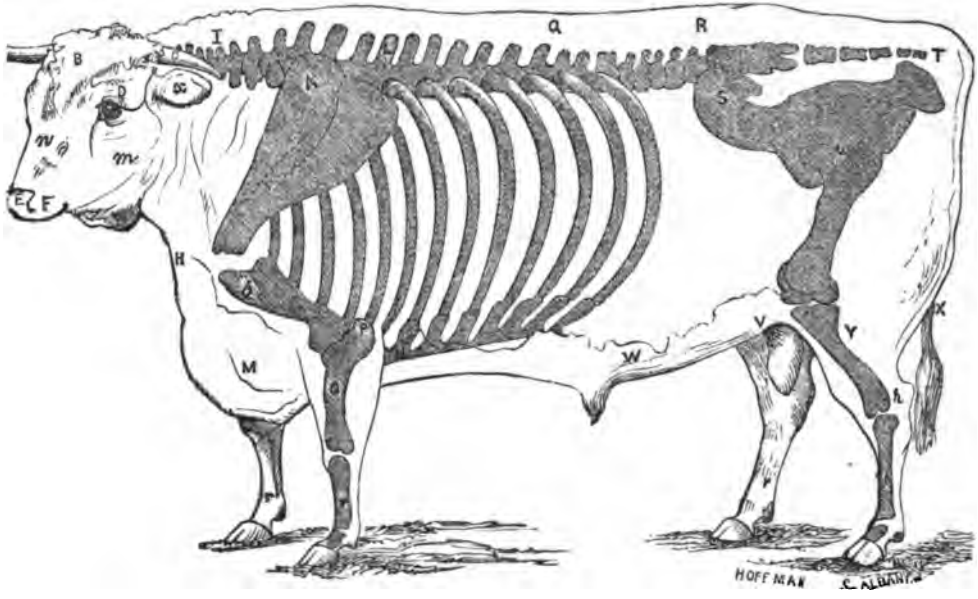

A, Occipital Bone; *B*, Frontal Bone; *C*, Horn; *D*, Eye; *E*, Nose; *F*, Lip; *n*, Face; *m*, Cheek; *H*, Dew-Lap; *M*, Brisket; *N*, Chest; *I*, Neck; *k*, Shoulder-blade; *b*, Shoulder-points; *L*, Crops; *Q*, Back; *R*, Loin; *S*, Hips, or Hucks, or Hooks; *u*, Thurl, or Whirl Bone, or Round Bone; *T*, Rump; *W*, Plates of the Belly; *V*, Flank; *X*, Cord of the Tail; *O*, Fore-Arm; *Y*, Thigh; *h*, Hock; *p*, the Elbow; *r*, the Leg or Shank, Cannon Bone; *x*, Ear.

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POINTS OF EXCELLENCE IN CATTLE.

The Executive Committee feeling the importance of securing, as far as practicable, the most perfect animals, secured the advice and co-operation of gentlemen familiar with cattle, and the annexed points of excellence prepared by them, were adopted by the New-York State Agricultural Society, for the guidance of the Judges at their Annual Fairs.

The numbers affixed to the points described, form the *maximum* that is to be allowed for each; and in proportion as the animal under examination is deficient in any point, so will the judges decrease the number, even should nothing be allowed for that point.

Points which are characteristic, and therefore *common to a breed*, though very valuable in themselves, are marked comparatively low, because they are easily obtained and demand but little skill or attention on the part of the breeder; nevertheless, an animal not possessing the characteristics of *its own breed*, must of necessity be almost worthless. On the other hand, it will be observed that points of less value, perhaps, in themselves, but which are characteristic *deficiencies* in the breed, or at any rate difficult to sustain at their maximum excellence, are marked numerically high, as they go far to complete or perfect the natural excellence of the animal.

Again, for the above reasons, it will be found that the *same* points, in *different breeds*, have different numerical values attached to them.

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POINTS OF A SHORTHORN COW.

PEDIGREE—showing unbroken descent, on both sides, from known animals, derived from English herds, as found in the English or American Herd Books, and without this, an animal can not compete in this class.

3 THE HEAD—small, lean and bony, tapering to the muzzle.

2 THE FACE—somewhat long, the fleshy portion of the NOSE of a light delicate color.

2 THE EYE—is of great significance, and should be prominent, bright and clear—"prominent," from an accumulation of "adeps" in the back part of its socket, which indicates a tendency to lay on fat—"bright," as an evidence of a good disposition—"clear," as a guarantee of the animal's health; whereas a dull, sluggish eye, belongs to a slow feeder, and a wild, restless eye, betrays an unquiet, fitful temper.

1 THE HORNS—light in substance and waxy in color, and symmetrically set on the head; the EAR large, thin, and with considerable action.

2 THE NECK—rather short than long, tapering to the head; clean in the throat, and full at its base, thus covering and filling out the points of the shoulders.

14 THE CHEST—broad from point to point of the shoulders; deep from the anterior dorsal vertebra to the floor of the sternum, and both round and full just back of the elbows; sometimes designated by the phrase "thick through the heart." These are unquestionably the most important points in every animal, as constitution must depend on their perfect development, and the ample room thus afforded for the free action of the heart and lungs.

5 THE BRISKET—however deep or projecting, must not be confounded with *capacity* of chest; for though a very attractive and selling point, it, in reality, adds nothing to the space within, however it may increase the girth without. It is in fact nothing more or less than a muscular adipose

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substance, attached to the anterior portion of the sternum, or breast-bone, and thence extending itself back. This form, however, of the brisket, indicates a disposition to lay on fat generally throughout the frame, and in this point of view is valuable.

4 The Shoulder—where weight, as in the Shorthorn, is the object, should be somewhat upright and of a good width at the points, with the blade-bone just sufficiently curved to blend its upper portion smoothly with the crops.

8 The Crops—must be full and level with the shoulders and back; and is, perhaps, one of the most difficult points to breed right in the Shorthorn.

8 The Back, Loin and Hips—should be broad and wide, forming a straight and even line from the neck to the setting on of the tail, the hips or hucks round and well covered.

5 The Rumps—laid up high, with plenty of flesh on their extremities.

2 The Pelvis—should be large, indicated by the width of the hips (as already mentioned), and the breadth of the twist.

3 The Twist—should be so well filled out in its "seam" as to form nearly an even and wide plain, between the thighs.

5 The Quarters—long, straight, and well developed downwards.

4 The Carcass—round; the ribs nearly circular, and extending well back.

3 The Flanks—deep, wide, and full in proportion to condition.

2 The Leg—short, straight, and standing square with the body.

3 The Plates—of the belly, strong, and thus preserving nearly a straight under line.

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2 THE TAIL—flat and broad at its root, but fine in its cord, and placed *high up*, and on a level with rumps.

2 THE CARRIAGE—of an animal gives style and beauty; the walk should be square, and the step quick; the head up.

15 QUALITY—On this the thriftiness, the feeding properties, and the value of the animal depend; and upon the touch of this quality rests, in a good measure, the grazier's and the butcher's judgment. If the "touch" be good, some deficiency of form may be excused; but if it be hard and stiff, nothing can compensate for so unpromising a feature. In raising the skin from the body, between the thumb and finger, it should have a soft, flexible and substantial feel, and when beneath the out-spread hand, it should move easily with it, and under it, as though resting on a soft, elastic, cellular substance; which, however, becomes firmer as the animal "ripens." A thin, papery skin, is objectionable, more especially in a cold climate.

2 THE COAT—should be thick, short and mossy, with longer hair in winter, fine, soft and glossy in summer.

3 THE UDDER—pliable and thin in its texture, reaching well
—— forward, roomy behind, and the teats standing wide apart,
100 and of convenient size.

Points of the Shorthorn bull.

As regards the male animal, it is only necessary to remark, that the points desirable in the female are generally so in the male, but must, of course, be attended by that masculine character which is inseparable from a strong, vigorous constitution. Even a certain degree of coarseness is admissible, but then it must be so exclusively of a masculine description as never to be discovered in the females of his get.

In contra-distinction to the cow, the head of the bull may be shorter, the frontal-bone broader, and the occipital flat and stronger, that it may receive and sustain the horn—and this latter may be excused if a little heavy at the base, so its upward form, its quality and color be right. Neither is the looseness of the

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skin, attached to, and depending from the under jaw, to be deemed other than a feature of the sex, *provided* it is not extended beyond the bone, but leaves the gullet and throat clean and free from dewlap.

The upper portion of the neck should be full and *muscular*, for it is an indication of strength, power and constitution. The spine should be strong, the bones of the loin long and broad, and the whole muscular system wide and thoroughly developed over the entire frame.

NORTH DEVONS.

PURITY of blood, as traced back satisfactorily to importations of both dam and sire, from known English breeders, or as found in the lately established Herd Book, for North Devons, and without this, an animal can not compete in this class.

4 THE HEAD—should be small, lean and bony, the forehead wide, flat, or from a fullness of the frontal bone over the eyes, somewhat dishing; the face straight; the muzzle fine; the nostrils open; the lips thin and rather flat.

4 THE NOSE—of a light delicate orange-color.

4 THE EYE—should be bright, prominent and clear, but mild and gentle in its expression, as indicative of that spirited but tractable disposition so necessary to cattle that must bear the yoke; a beautiful orange-colored ring should invariably surround the eye.

2 THE EAR—thin; of a rich orange-color within, of medium size, with a quick and ready movement, expressive of attention.

2 THE HORNS—light, tapering, of a waxy color toward the extremity, and gaily as well as symmetrically placed on the head; the occipital bone, narrow, thus bringing the base of the horns nearer together.

2 THE NECK—of medium length, somewhat light in substance, very clean, and well set up on the shoulder.

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14 THE CHEST—deep and round, carrying its fullness well back of the elbows, thus affording, by the aid of a springing rib, abundant internal room for the action of thoracic viscera, the heart and lungs, and that too without an *extreme* width forward, and between the points of the shoulders, which might interfere with the action of the animal.

4 THE BRISKET—It being assumed that it adds nothing to the internal capacity of the chest must not overload the breast, but be sufficiently developed to guarantee a feeding property, attended with a full proportion of fatty secretion.

4 THE SHOULDER—is, in this breed, a very beautiful and important point, and should in a *degree* approximate in form to that of the horse. It should take a more sloping position than is found in most other breeds, with its points less projecting, and angular, and the blade bone more curved, thus blending with and forming a fine wither, rising a little above the level line of the back.

3 THE CROPS—full and even, forming a true line with the somewhat rising shoulder, and level back, without either drop or hollow.

9 BACK, loin and hips—broad and wide, running on a level with the setting on of the tail.

5 THE RUMPS—lying broad apart, high, and well covered.

2 THE PELVIS—wide.

3 THE TWIST—full and broad.

6 THE QUARTERS—long and thoroughly filled up between the hooks or hip bones, and the rumps; with a good muscular development down the thigh to the hocks.

3 THE FLANK—moderately deep, full and mellow in proportion to condition.

5 THE LEGS—not too short, and standing as square, and straight behind, as may be compatible with activity. The bone

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quite small below the hock and knee; the sinews large and clean, with the fore-arm well developed.

2 The Carcass—round and straight; its posterior ribs almost circular, extending well back, and springing nearly horizontally from the vertebra, giving, in fact, much greater capacity than would at first appear.

1 The Tail—at its junction, level with the back, long, very slender in its cord, and finishing with a tassel of white hair.

1 The Color—in its *shades* and *degrees*, is more or less governed by fashion; but in the Devon is always red. Formerly a rich blood red, was the favorite color, and a test of purity; and now a somewhat lighter color is in vogue, approaching rather nearer to that of the *South* Devon, which is a larger, coarser, stronger animal. In all cases the color grows lighter round the muzzle, while a dark mahogany color, verging almost to a black, and growing yet darker about the head, always was a very questionable color for a *true North Devon*, more especially when accompanied by a dark nose.

1 The Hair—should be short, thick, and fine; and if showing on its surface a fine curl, or ripple, it looks richer in color, and is supposed to indicate a hardier and more thrifty animal.

1 The Udder—should be such as will afford the best promise of capacity and product.

3 Carriage—The Devons having, from their excellence in the yoke, another destiny besides that of the butcher's block, it is all important that the animal's carriage should indicate as much; but to obtain this, something of the heavy, inert, squarely moulded frame of the merely beefing animal must be relinquished for a lighter and more active frame.

15 Quality—On this the thriftiness, the feeding properties, and the value of the animal depend; and upon the touch of

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this quality rests, in a good measure, the grazier's and the butcher's judgment. If the "touch" be good, some deficiency of form may be excused; but if it be hard and stiff, nothing can compensate for so unpromising a feature. In raising the skin from the body, between the thumb and finger, it should have a soft flexible and substantial feel, and when beneath the out-spread hand, it should move easily with it, and under it as though resting on a soft, elastic, cellular substance; which, however, becomes firmer
— as the animal "ripens." A thin papery skin is objection-
100 able, more especially in a cold climate.

Points of the Devon bull.

As regards the male animal, it is only necessary to remark, that the points desirable in the female are generally so in the male, but must, of course, be attended by that masculine character which is inseparable from a strong, vigorous constitution. Even a certain degree of coarseness is admissible, but then it must be so exclusively of a masculine description as never to be discovered in the females of his get.

In contra-distinction to the cows, the head of the bull may be shorter, the frontal bone broader, and the occipital flat and stronger, that it may receive and sustain the horn—and this latter may be excused if a little heavy at the base, so its upward form, its quality and color be right. Neither is the looseness of the skin, attached to, and depending from the under jaw, to be deemed other than a feature of the sex, *provided* it is not extended beyond the bone, but leaves the gullet and throat clean and free from dewlap.

The upper portion of the neck should be full and *muscular*, for it is an indication of strength, power and constitution. The spine should be strong, the bones of the loin long and broad, and the whole muscular system wide and thoroughly developed over the entire frame.

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HEREFORDS.

PURITY OF BLOOD, as traced back to the satisfaction of the committees, to imported blood, *on both sides*, from some known English breeder, or as found in Eyton's Hereford Herd Book.

3 THE HEAD—moderately small, with a good width of forehead, tapering to the muzzle; the cheek bone rather deep, but clean in the jaw.

2 THE NOSE—light in its color, and the whole head free from fleshiness.

2 THE EYE—full, mild, and cheerful in its expression.

1 THE EAR—of medium size.

2 THE HORNS—light and tapering, long and spreading, with an outward and upward turn, giving a gay and lofty expression to the whole head.

2 THE NECK—of a medium length; full in its junction with the shoulders, spreading well over the shoulder points and tapering finely to the head.

14 THE CHEST—broad, round, and deep; its floor running well back of the elbows, which with a springing fore-rib, gives great interior capacity to this all important portion of the body.

4 THE BRISKET—*when in flesh*, largely developed, descending low between the legs, and deep, by covering the anterior portion of the sternum, or breast bone, but never interfering with the action of the animal when in working condition.

3 THE SHOULDER—lying snugly and closely in towards the top and spreading towards the points; the blade sloping somewhat back, and running pretty well up into the withers, which by rising a very trifle above the level line of the back, gives to the ox a very upstanding and beautiful fore-end. The whole shoulder well clothed with muscle.

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3 THE CROPS—filling all up evenly behind the shoulders, and blending them smoothly in with the muscles of the back.

8 THE BACK, loin, and hips, should be broad, wide and level.

4 THE RUMPS—should lie nearly or quite level with the back, and their covering should be abundant, mellow, loose, and freely moving under the hand, thus showing great aptitude to fatten.

3 THE PELVIS—roomy; indicated by wide hips (as already mentioned,) and the space between the rumps, which should stand well apart, giving a general breadth to the posterior portion of the animal.

5 THE TWIST—broad and full, extending well down on each side of the thigh, with corresponding width—a broad twist as a good indication of a butcher's animal.

6 THE HIND QUARTERS—large and thoroughly developed in its upper and more valuable portions, as beef. The thigh gradually tapering to the hock, but muscular.

3 THE CARCASS—round throughout; full and capacious, with the under line of the belly level, or nearly so.

3 THE FLANK—full and wide.

3 THE LEGS—straight, upright; firmly placed to support the superincumbent weight; a strong back sinew, but by no means a large coarse cannon bone.

3 THE PLATES—of the belly, strong, and thus preserving nearly a straight under line.

2 THE TAIL—large and full at its point of attachment, but fine in its cord.

3 THE CARRIAGE—prompt, resolute, and cheerful; and in the ox, gay and lively.

3 THE HAIR—thick, close and furry, and if accompanied with a long growth, and a disposition to curl moderately, is

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more in estimation, but that which has a harsh and wiry feel is objectionable.

2 The Udder—should be such as will afford the best promise of capacity and product.

1 Color—reds or rich browns, oftentimes very dark, with a white or "brockled" face, are now the colors and marking of the Herefords, though grey Herefords or cream colored are not uncommon.

15 Quality—On this the thriftiness, the feeding properties, and the value of the animal depend; and upon the touch of this quality rests, in a good measure, the grazier's and the butcher's judgment. If the "touch" be good, some deficiency of form may be excused; but if it be hard and stiff, nothing can compensate for so unpromising a feature. In raising the skin from the body, between the thumb and finger, it should have a soft, flexible and substantial feel, and when beneath the out-spread hand, it should move easily with it, and under it, as though resting on a soft, elastic, cellular substance; which, however, becomes firmer as the animal "ripens." A thin papery skin is objectionable, more especially in a cold climate.

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100

Points of the Hereford bull.

As regards the male animal, it is only necessary to remark, that the points desirable in the female are generally so in the male, but must, of course, be attended by that masculine character which is inseparable from a strong, vigorous constitution. Even a certain degree of coarseness is admissible, but then it must be so exclusively of a masculine description as never to be discovered in the females of his get.

In contra-distinction to the cows, the head of the bull may be shorter, the frontal bone broader, and the occipital flat and stronger, that it may receive and sustain the horn—and this latter may be excused if a little heavy at the base, so its upward form, its quality and color be right. Neither is the looseness of the skin, attached to and depending from the under jaw, to be deemed other

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than a feature of the sex, *provided* it is not extended beyond the bone, but leaves the gullet and throat clean and free from dewlap.

The upper portion of the neck should be full and *muscular*, for it is an indication of strength, power and constitution. The spine should be strong, the bones of the loin long and broad, and the whole muscular system wide and thoroughly developed over the entire frame.

AYRSHIRES.

PURITY OF BLOOD—as traced back to importations of both dam and sire, under such evidence as will satisfy committees.

4 THE HEAD—as in other breeds, small; the face long and narrow; the muzzle and nose variable in color.

2 THE EYE—placid and not strikingly large.

4 THE EAR—of full size, and of an orange color within.

2 THE HORNS—small, tapering, with an outward and upward turn, and set on wide apart; the face somewhat dishing.

4 THE NECK—of medium length, clean in the throat, very light throughout, and tapering to the head.

6 THE SHOULDERS—lying snugly to the body, thin at their top, small at their points, not long in the blade, nor loaded with muscle.

12 THE CHEST—must retain sufficient width and roundness to insure constitution. The lightness of the fore quarter and the "wedge shape" of the animal, from the hind quarter forward, arising more from a small, flat and thin shoulder, than from any undue narrowness of the chest.

4 THE CROPS—easily blend in with so thin a shoulder and prevent all hollowness behind.

4 THE BRISKET—not over loading the fore end, but light.

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8 The Back—should be straight, and the loin wide, the hips rather high and well spread.

4 The Pelvis—roomy, causing a good breadth at what is termed the "thurl," or "round-bone," and between the points of the rumps.

6 The Quarters—long, tolerably muscular, and full in their upper portion, but moulding into the thighs below, which should have a degree of flatness, affording thus more space for a full udder. The flank well let down, but not heavy.

8 The Ribs—behind, springing out *very* round and full, affording space for a large udder, which by Ayrshire breeders is considered very essential to secure the milking property; the whole carcass thus acquiring increased volume towards its posterior portion.

4 The Rumps—nearly level with the back, projecting but little.

1 The Tail—thin in its cord, of full length, light in its hair, and set somewhat further into the back than would be admissible with some other breeds.

3 The Legs—delicate and fine in the bone, inclining to be short, and well knit together at the joints.

12 The Udder—in this breed is of more especial importance, as the Ayrshires have been bred almost exclusively with reference to their milking properties. The great feature of the udder should be capacity, without being fleshy. It should be carried squarely and broadly forward, and show itself largely behind. As it rises upwards it should not mingle too immediately with the muscle of the thighs, but continue to preserve its own *peculiar* texture of skin—thin, delicate and ample in its folds. The teats should stand wide apart, and be lengthy, but not large and coarse.

6 The Handling—will show the skin to be of medium thickness only, moving freely under the hand and evincing a readiness in the animal to take on flesh, when a drain on the constitution is no longer made by the milk pail.

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4 THE HAIR—soft and thick, in the phraseology of the country, woolly.

1 COLOR, VARIES—a dark red—a rich brown—a liver color, or mahogany, running into almost a black; those very much broken and spotty at the edges on a white ground are the favorite colors at the present time. The light yellow is, however, a color sometimes found on very good cows, but these pale colors are objected to from an impression that such belong to animals of less constitution.

1 CARRIAGE—should be light, active, and even gay; this latter
— appearance is much promoted by the upward turn of the
100 horn.

Points of the Ayrshire bull.

As regards the male animal it is only necessary to remark, that the points desirable in the female are generally so in the male, but must, of course, be attended by that masculine character which is inseparable from a strong, vigorous constitution. Even a certain degree of coarseness is admissible, but then it must be so exclusively of a masculine description as never to be discovered in the females of his get.

In contra-distinction to the cows, the head of the bull may be shorter, the frontal bone broader, and the occipital flat and stronger, that it may receive and sustain the horn—and this latter may be excused if a little heavy at the base, so its upward form, its quality and color be right. Neither is the looseness of the skin, attached to, and depending from the under jaw, to be deemed other than a feature of the sex, provided it is not extended beyond the bone, but leaves the gullet and throat clean and free from dewlap.

The upper portion of the neck should be full and muscular, for it is an indication of strength, power and constitution. The spine should be strong, the bones of the loin long and broad, and the whole muscular system wide and thoroughly developed over the entire frame.

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REPORTS OF JUDGES AT THE SARATOGA FAIR, SEPTEMBER, 1853.

DEVON BULLS.

The following report is submitted on Devon bulls:

As the awards were first made by a majority of the Committee, the first premium on bulls over three years old, was given for an animal for which no pedigree or proof of blood was shown, as required by the Society to be eligible to competition. The Chairman therefore felt it his duty to submit the facts to the Executive Committee, who immediately ordered that the animal in question be "excluded from competition," and that so much of the report as related to "aged bulls" be recommitted for other awards. Whereupon the Chairman and Mr. Kirby decided the premiums on bulls over three years old according to the following list. The other premiums remain as originally determined by a majority of the committee.

Best bull, 3 years old and upwards, Remington and Bowen, Sennett, Cayuga co., "Prince,".....	$25
2d best, J. H. Casswell, Exeter, Otsego co., "Osceola,".....	15
3d best, D. C. Howe, Brutus, Cayuga co., "Criterion,".....	5
Best bull, 2 years old, L. G. Morris, Mount Fordham, "Frank Quartly,".....	20
2d best, W. P. & C. S. Wainwright, Rhinebeck, "Uncas,"..	10
3d best, J. B. Tuckerman, Richfield, Otsego co., "Young Major,"	5
Best bull, 1 year old, George Vail, Troy, "May Boy,".....	15
2d best, L. H. Colby, Scipio, Cayuga co., "Valiant,".....	10
3d best, Peleg Weeden, Preston Hollow, Albany co.,.....	5
Best bull calf, W. P. & C. S. Wainwright, Rhinebeck, "Dacotah,".....	5
2d best, L. G. Morris, Mt. Fordham, "Coke,"....Trans. and	3

To the above awards, except those for bulls over three years old, the Chairman dissents, so far as is indicated by the accompanying classification, which expresses his opinion of the relative merits of the animals offered for examination.

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Two year olds.

1. "May Boy," owned by W. P. & C. S. Wainwright.
2. "Frank Quartly," owned by L. G. Morris.
3. "Uncas," owned by W. P. & C. S. Wainwright.

Yearlings.

1. "Holkham," owned by L. G. Morris.
2. "Valiant," owned by L. H. Colby.
3. "May Boy," owned by Geo. Vail.

Calves.

1. "Coke," owned by L. G. Morris.
2. "Dacotah," owned by W. P. & C. S. Wainwright.

The Chairman deems it proper to explain the reasons for his preference. First, as between "May Boy" and "Frank Quartly," in the class of two year olds. Both are animals of extraordinary excellence, and their relative merits are so nearly balanced, that after a long and critical examination, it was not without hesitation that the preponderance was decided to be in favor of the former. It is true there is a difference of five months in their ages, ("May Boy" being oldest,) and it cannot be said, positively, that when both arrive at maturity, the younger may not be the superior animal; but for the present, "May Boy" appeared to the undersigned to excel in the closeness and covering of the shoulders, fullness of the crops, fullness of the first ribs, (girth behind the shoulders,) and slightly in the handling, while most other points of the two animals were nearly equal. The undersigned could not regard "Uncas," though a fine and valuable animal, as equal to "May Boy," or to "Frank Quartly," in the most important points, especially in substance and constitution.

"Holkham," in the class of yearlings, like "May Boy" in that of two year olds, was not deemed worthy of any prize by two of the members of the Committee. The undersigned has felt bound to place him over both those to which prizes were awarded. Except in the undue size of his horns, and rather too dark a shade of color, he was much superior to either of the others in his class in all essential points, but particularly in rotundity of carcass,

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fullness and capacity of chest, and general appearance of constitution and thriftiness. The undersigned has placed Mr. Colby's "Valiant" next to "Holkham," on account of his secondary merit in symmetry, thriftiness and constitution.

In the class of calves, the undersigned has reversed the position of the animals to which the prizes were awarded, because he regards "Coke" as possessing more constitution, with equal merits to "Dacotah" in other respects.

SANFORD HOWARD,
Chairman.

MERINO SHEEP.

The Committee on Merinoes, in discharging the duties of their trust, find but a single competion in Spanish sheep for the numerous premiums offered in your Society, viz. Mr. Joseph Haswell of Rensselaer county.

George W. McKie exhibited two highly meritorious French merino bucks, but as he has not complied with the rules of the society, and therefore not entitled to its regular premiums, we recommend a meritorious one for the sum of $10.

Peleg Weeden exhibited a single French merino ewe, combining the best properties of that family, for which we recommend a meritorious premium of $5.

Without disparagement to the other classes of sheep, your committee cannot but express their conviction that the Spanish merino and their grades are the most profitable to the producer, and regret that the competition is not such as to be more creditable to the farmers of the Empire State.

An interest that annually adds millions of dollars to the wealth of its inhabitants, should surely stimulate more competition for the prizes of your Society.

It is believed by your committee, that the combination of the Spanish and French merino, possessing entirely distinct charac-

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teristics into one class, has detered many from competition, and they would respectfully recommend that the French merino and their grades constitute hereafter a separate and distinct class.

The new and stringent regulations of your Society in relation to the fleece of the animal exhibited, have nearly closed the door against competitors, and is believed to be well calculated to create a prejudicial influence. To these causes may mainly be attributed the want of competition rather than to a declining interest in the breeder of this highly profitable class of animals.

HARVEY BROWN,
J. W. HYDE,
GEORGE CAMPBELL.

CROSS BREED SHEEP.

The Committee respectfully report, that all the entries submitted to their inspection, are distinguished by great and unusual excellence. Quite dissimilar in many particulars, each entry appears to your Committee to possess peculiar properties, superior to the same qualities in the other entries. In adopting our conclusions we have had reference to the combination in each animal of its points of superiority.

The general appearance of the sheep of Wm. Haswell, No. 43, exhibits great perfection in form and size. We think, however, there exists in these sheep a defect in the exterior surface of the fleece, which, in the opinion of the Committee, presents greater hardness and a stiffer formation with less compactness than is desirable.

The entries of Mr. D. S. Curtis, No. 3, are remarkable for a peculiar softness and delicacy of touch, and by an unusual fineness and closeness of fleece.

The exhibition of ten bucks, No. 11, by Mr. Peleg Weeden, is of a very superior character, and although excluded by the rules of the Society from competition, we cordially recommend them as very superior animals, and as combining evidences of an excellent stock.

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We have examined the cleansed wool of the sheep inspected, and pronounce it very beautiful. We would respectfully suggest, however, that the rule requiring this exhibition of fleece is calculated to work unequally and unjustly, being rather a test of the skill of the sorter and cleaner than of the real quality of the wool; that it subjects the exhibitors to much inconvenience, and will often exclude articles highly worthy of competition.

W. C. WATSON,
CHARLES W. HULL.

REPORT OF COMMITTEE ON MACHINERY, No. 40.

The judges appointed to examine the articles exhibited in class IV, No. 40, at the Annual Fair of the State Agricultural Society, held at Saratoga, in September, respectfully offer the following report:

That very few of the articles submitted to their examination, were such as are embraced in the printed offer of premiums, and that for many of the articles for which premiums were offered, there was no competition whatever.

Under these circumstances, we proceed to pass in review such articles as were submitted to our inspection, describing as well as we may be able those which are wholly novel in construction; and recent improvements on those implements which are already familiar to the Society.

It is well known that trials of reaping and mowing machines, thrashing machines, horse powers, cultivators, drill barrows, plows, and sowing machines, have been recently made, under the auspices of the Society, with a degree of thoroughness and care, which has never been equalled in the history of mechanico-agricultural investigation.

Since our examinations were confined to a simple inspection (with one exception) of the implements, it can not be expected, that we should place our opinions, with respect to them, on the same footing with those which were founded on so extensive a

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series of practical trials and experiments; nor would it accord with the wishes of the Society, or with our own sense of propriety, to propose the award of premiums which might dim the greenness of any laurel, which was won on the hardly contested fields of Albany or Geneva. While, therefore, we shall endeavor to do full justice to contributors of the present year, we shall recommend no premiums which will conflict with those of 1850 and 1852.

REAPING MACHINES.

At the Geneva trial, a self-acting or automatic reaper, invented by Jearum Atkins, of Will county, Illinois, was exhibited by J. S. Wright, Esq., of Chicago. It was the invention of a very excellent mechanic, who for ten years past has been wholly bed-ridden; yet physical infirmity has been unable to repress the energy of his genius, nor has physical suffering abated his aspirations for usefulness to his fellow men. Through long years of suffering, amid the solitude of his lonely chamber, he brooded over the possibility of a machine, which should relieve the grain growing farmer of the most arduous of his toil. He had seen how sorely taxed were the energies of the farmers, particularly in the grain growing regions of the west, when they were required to transfer the teeming treasures of the field to their appropriate store houses. The work requires to be accomplished in a given time, and since labor is scarce and costly, and sometimes impossible to be procured, the farmer is compelled to exert his own labor and that of his children, to a degree which exhausts his strength, and sometimes lays the foundation of diseases which carry him prematurely to his grave.

To obviate the necessity for this exhausting toil, Mr. Atkins devoted all the faculties of his fertile mind; the solution of a mechanical problem, so complex in its nature, severely taxed his ingenuity: let those who would appreciate the difficulties of the task go to the harvest field, cut the grain and rake it into gavels, carefully noting every motion of their limbs, every flexure of their bodies, and every pressure of their fingers: let all this be done slowly and at leisure, and the separate motion of each particular muscle during the process, be observed and registered, and they will find the motions, the pressures and the curves so nu-

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merous and complicated, that our best mechanics would almost despair of imitating them by any combination of mechanical contrivances.

These difficulties did not discourage Mr. Atkins.

> "Through long days of labor
> And nights devoid of ease,"

he toiled on, with uncomplaining and unshrinking courage. After exhausting all *known* methods of mechanical combination, and proving their inadequacy, he turned his attention to the *unknown*, and at length the wished for method dawned upon his vision. Infirmity prevented him from rushing into the street, like the great Archimedes of old, but like him he cried, with no less joy and no less fullness of assurance, *Eureka! I have found it!*

In striking contrast with the usual history of inventions, and adding greatly to the credit of the inventor, is the fact, that the whole machine, even in its minutest parts, the form and size of every piece, and the range and direction of every motion, was clearly determined in his own mind, before a single drawing was made or a single model formed.

The time which elapsed between the completion of the plan in his own mind and the trial at Geneva was only sufficient to construct a single machine, the workmanship of which was quite unworthy of the beautiful principle which it embodied. Owing to its imperfect construction, it broke down repeatedly at the trial, but its powers were sufficiently displayed to satisfy all the judges, and, so far as we know, all the spectators, that it was right in principle, and, when properly built, would prove a boon of inestimable value to the farmer; but as the machine could not show what it was capable of doing, they were prevented by the rules of the trial, from awarding it a premium, and it was withdrawn from competition.

PLOWS.

No plow "with newly invented principles or arrangements not heretofore known," was presented.

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Starbuck & Co., exhibited 15 of their well known and highly approved implements, which, for beauty of finish, durability of structure, and lightness of working, furnished a remarkable contrast with the old fashioned "bull plow," which stood beside them.

Whittemore & Co., exhibited some well made plows, and side-hill plows; we did not however discover any particular improvement in them.

N. Baker exhibited a gang plow, consisting of three plows. There is an adjustment by which they may be raised out of the ground on encountering an obstacle, without backing the team; another for changing the depth of the furrows; and another for relieving the necks of the horses and cattle employed from the weight of the implement. These adjustments seem well contrived and efficient, but we are bound to say, the form of the plows is not in conformity with the best modern models, and we fear model farmers would pronounce them behind the age. Price $37.

MOWING MACHINES.

Howard & Co., exhibited one of Ketchum's machines, with very great improvements over those of last year:

1st. It is much better built, the workmanship is now excellent throughout, and we consider it now redeemed from the reproach of careless construction, which so justly attached to it last year.

2d. Bearings have been added at both ends of each shaft, which diminish the cramping and cutting away of the boxes.

3d. By a new arrangement it may be more easily taken apart and put together.

4th. The machine may be easily thrown out of gear, which we deem a very important improvement.

5th. A counterbalance is attached to the crank shaft, which improves the smoothness and uniformity of its motion.

6th. Oil cups have been added.

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This machine has won high favor during the past year, and in our estimation is well worthy of it.

PATENT SHEAR-CUT BURR DRAFT FOR MILL-STONES.

This contrivance was offered for examination by Moore Holden, the patentee. It is claimed that double the amount of work can be performed with this draft than can be done with any other, with the same power. The whole matter, however, is too deep for us, we can not understand it, and of course are incompetent to give an opinion on its merits.

PUMPS.

A. W. Gay & Co., of 118 Maiden Lane, New-York, exhibited a cast iron pump, called "Warner's Patent Suction, Forcing and Anti-Freezing Pump." Price $25; and of the iron pipe 32 cents per foot. The cylinder is 4 inches in diameter; length of stroke 6 inches. At the ordinary speed of hand pumping, it throws a stream through 15 feet of hose and a $\frac{3}{8}$ nozzle, to the distance of 50 feet. When the point of delivery is 4 feet 4 inches above the surface of the water in the well, ten strokes of the lever raises three gallons of water; or it will raise, with ease, 27 gallons per minute, at the ordinary rate of leisurely pumping; in cases of emergency, with rapid action, it could be made to raise double or treble that amount. It has a moveable air chamber, carries a steady, continuous stream, is durable, and unaffected by frost. Where a farmer desires to have a pump in his well, which besides supplying his family and stock with water will answer for a fire engine, when connected with a hose and pipe, he can not have a pump better suited to his purposes than this one. We recommend that a diploma and S. Silver Medal be awarded for it.

A pump adapted for a garden engine was exhibited by L. P. & W. F. Dodge, 5 inch stroke. Through 5 feet of hose it threw a stream 48 feet with a $\frac{3}{8}$ nozzle. With the point of delivery 2 feet above the surface of the water in the reservoir, 9 strokes of the lever raises 3 gallons of water. At the ordinary rate of pumping it will deliver about 20 gallons per minute. Considering it admirably adapted for a garden engine, we recommend the award of a Diploma and S. Silver Medal. Price $21.

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R. R. Johnson, of Covington, Ky., exhibited a pump somewhat similar to the foregoing. Through two feet of hose and a three-eighth nozzle, it threw water fifty-eight feet. Its stroke is five inches. With the point of delivery eighteen inches above the water of the reservoir, ten strokes of the lever raises three gallons of water. At the ordinary rate of pumping it will raise twenty-five gallons per minute. The lever is of the second order, that is, the weight is between the fulcrum and the power; this causes more rubbing of the valves against the cylinder, and a less steady action, hence the pump is much harder to work than those of the first order of levers, as was very apparent in our experimental trials. Price $25.

Warren, Sweatland & Co., exhibited a suction and force pump. It has no air chamber, but the upward and downward stroke each force the water forward, and thus keep up nearly a continuous stream; it is not however as entirely continuous as those pumps which are furnished with air chambers. We could not try this with a hose. Its stroke is six inches; with the point of delivery four feet above the surface of the water in the reservoir, six strokes of the lever raise three gallons of water. At the ordinary rate of pumping it will deliver about thirty gallons per minute. Price $30.

Daniel Flagg, of Pembroke, New Hampshire, exhibited the model of a pump, with a moveable air chamber; we could not of course institute a comparison between a mere model and a finished pump, so as to determine their relative merits. The principle of this pump appeared to us almost precisely like that of A W. Gay & Co.

Four brass pumps were exhibited by G. Paddock & Co , Center street, New-York. They are of the kind used in cities for bathing purposes; we did not see them in operation, but they appeared well made, and we have no doubt they are well adapted for the purposes intended.

We have not mentioned the diameter of the cylinders of the above mentioned pumps, although that is an important element

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of their capacity; we could not get at them to measure them ourselves, and the measures given by the proprietors were keenly disputed by other competitors. As we could not verify the correctness of their statements, we have omitted them on the record.

HAY PRESSES.

No upright presses were exhibited.

Deering & Dedrick, Albany, exhibited an horizontal press, which we were convinced is of great value, and supplies a want which has long been felt by the farmer. It may be carried to any part of the field, weighing one ton, (the press 1,800 lbs. and the capstan 200 lbs.) The hay may be more conveniently packed in the box than in any upright press. The fastenings of the doors are admirably contrived for durability and ease in working, no hammer or mallet being needed to open or close them: this is a point which every practical presser knows is of great importance. The bale can be drawn out and the hoops nailed with perfect ease; the follower is driven up by the action of *double* toggle joints, the top and bottom, therefore, move with equal force however unequal may be the packing of the hay; all guides are dispensed with, and the friction inseparable from them is therefore saved. A compound capstan is used with it, with which the press is run up or down while the horse moves in one direction. Price, for presses to make 300 lb. bales, $140, and for 250 lb. bales, $130, including rope and capstan. Premium, silver medal.

Emery & Co., Albany, also exhibited a horizontal press; it has two followers, each operated by a single toggle joint, and kept in their position by wooden guides. The capstan is precisely like Dedrick's; both claim the priority of the invention. It weighs 1,700 lbs. We believe there are three objections to this press:

1st. With a single follower the horse has only to overcome the *direct action* of the press, the immovable floor sustaining the *reaction:* in this press with double followers the horse has to sustain *both* the action and reaction, hence it must take much more power to operate it.

2d. As guides are necessary in this press to maintain the followers in an upright position, the horse must overcome their fric-

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tion also, which is not inconsiderable, and we believe they would be found in practice frequently to get out of order.

3d. This press cannot be used with *wooden* hoops, which are almost exclusively used in the chief hay pressing districts. Price $135.

WEIGHING INSTRUMENTS.

Two of E. & T. Fairbanks's platform scales, price $44 and $25, and two of Fairbanks's grocers scales, price $9 and $7, were presented by Wm. Drown, agent. These articles are too well known to the public to need our notice or commendation. The only change we noticed, since last year, was the addition of steel bearings, to obviate lateral friction, which is certainly an improvement. A pair of hay scales from the same establishment seemed to us emphatically a *perfect* article, leaving nothing to be desired, in convenience or accuracy. The usual notches on the beam were dispensed with; the poise slides along smoothly and noiselessly, an index pointing downward to the figures on the side of the beam, the weight of the load is thus quickly ascertained and indicated with less liability to mistake than when the poise was lifted from tooth to tooth. Premium $20.

CIDER MILLS.

There were several cider mills on the ground, but only one of them was placed on our list; the remainder were probably examined by other judges. The machine examined by us was presented by John Jones, of Little Falls, Herkimer county, N. Y. They were of two sizes, one to be worked by a horse and one by hand. The hand mill and press can be removed from place to place as easily as a wheel-barrow. The mill consists of a series of serrated iron plates, inserted spirally on a wooden cylinder; the apples pass between these teeth and the edge of an iron plate, which reduces them to a much finer pomace than the old fashioned mill. With one of these the exhibitor, without any great effort ground four bushels of pomace in eight minutes. The pomace is transferred to a cylinder formed by riveting strong wooden slats to iron hoops, the follower is put on, the screw turned and the cider runs. By one of these machines one man can make

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five barrels of cider in a day. The mills may with equal utility be applied to the grinding of potatoes, turnips, carrots, meat for sausages, and for grinding sugar. The press may be applied to pressing tallow, lard, currants for wine or jelly, and for wringing clothes. By the aid of these presses the farmer may keep himself in sweet cider the year round. He can make his cider at "odd times;" he requires no extra help, no straw to make the cheese; he can save his wind-falls, by converting them into cider from day to day, and when there is danger of their rotting in the cellar he can arrest the threatened danger by converting them into cider. The price of a machine for horse power is $60; for hand power $25. We recommend the award of a Diploma.

CHEESE PRESSES.

Several presses were exhibited and referred to other judges; the only one submitted to us was Chas. C. Lewis's. This was an excellent implement, formed by a combination of the screw and toggle joint, which of course gains in power as the resistance increases, and is therefore justly entitled to the name of "Progressive Power Press," bestowed on it by the maker. We regard it as inferior only to Dick's anti-friction press. Price $16.

HYDRAULIC STEAMER AND WASHER.

We were unable to see A. Bently, the exhibitor of this implement, but judging from our own unassisted examination, we did deem it a very valuable boon to the farmer.

DRILL BARROWS AND SEED SOWERS.

Emery & Co.'s drill barrow is well known to the community, and has often received the approbation of this Society; they have been this year improved, so that two rows can be planted at once; the space between the drills can be easily adjusted. Price $5.

Woodward's corn planter was presented by H. O. Williams, Sunderland, Mass. This implement received a premium last year, but has since been greatly improved: 1st. The surface board has been widened, for removing obstructions and pulverizing the soil. 2d. A cast iron cylinder, for receiving and dropping *all kinds* of seeds. 3d. The distances between the seeds may be graduated

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by a simple and efficient contrivance to 12 different distances, from 2 inches to 12 feet apart. 4th. The arrangement of a compost manure dropper, which can be regulated by a lever to drop from four quarts to forty bushels to an acre. For these improvements we recommend the award of a Diploma. Price $20.

J. A. Whitford exhibited a garden hand drill barrow; it is on the brush and sliding tin principle, and we think presents nothing original and peculiar that is valuable.

Chas. A. Wakefield, of Elizabethtown, Essex county, N. Y., exhibited a seed planter; which may be operated with horse or hand power, and presents several novel features: 1st. It plants seeds of all sizes, either a single seed or any given number; this is effected with a wedge shaped dropping plate, and a peculiar shaped slot, so that by moving the slide in a straight line the diameter of the aperture is increased both ways alike. 2d. The certainty that the seed hole will fill and discharge its seed at each vibration, which is effected by passing a wire over the plate in the bottom of the hopper, moving in a contrary direction to the plate, and the blow given to the plate by the force of the spring as it draws it backward under the brush. 3d. The employing two valves instead of one for dropping plaster, ashes, &c. The lower valve closes the lower end of the tube, while the upper valve opens and fills the tube, then immediately closes the bottom of the hopper, after which the lower valve opens and drops the plaster directly over, but not in contact with the seed, the dirt closing over and partially covering the seed before the plaster tube is over it. 4th. The opening in the back of the machine, which enables the operator, at any moment, to see whether the machine is dropping or not; this, though a small matter, is one of great practical importance. Price of seed planter alone, $10; seed planter with plaster dropper, $15. Vol. Trans.

Bickford & Huffman, of Macedon, Wayne county, showed a grain drill. The amount of grain to the acre is regulated by gear wheels of different sizes. The cylinder is countersunk, in which the seeds are lodged; the brush is stationary, there is a rod in the seed box, by the motion of which the seeds are kept from packing. We did not observe any thing peculiar in the tubes or

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their adjustment. The workmanship appeared to be good and strong. Price for 9 tube drill, $75.

Foster, Jessup & Co., of Palmyra, Wayne county, N. Y., showed a grain drill, the peculiarity of which consisted in the adjustment of the sowing cylinder. It is of cast iron, indestructible, dispensing with brushes and agitating rods. We are of opinion that in the single particular of sowing with *accuracy* and *certainty*, this machine surpasses any that we have seen. Price of 9 tube drill, $75.

Seymour & Co., presented their well known grain drill, which has so often received the first premium of the Society, and the approbation of the first farmers of the State. We are of opinion that taken as a whole, with all its combinations and adjustments, it is still the most perfect article extant, and if fitted with Foster, Jessup & Co.'s sowing cylinder, would be as perfect as any farmer could desire. It is the only machine that we are acquainted with that, at one operation, sows grass seed broadcast, drills the grain, and sows any fine fertilizer, such as ashes, super-phosphate of lime, plaster, &c. It can be fitted as a horse-hoe, with drag teeth, or with drag teeth alone. Price, including all adjustments and additions, $130.

WATER RAMS.

Douglas's hydraulic ram was exhibited, in successful operation on the ground, raising water 90 feet in altitude, from a ravine in the neighborhood to the reservoir in the grounds used for watering cattle. It was an excellent article, strong and well made, but as there was nothing novel in its construction or arrangement, it can not receive a premium, consistently with the regulations of the Society.

SMUT MACHINES.

Daniel Pease, of Floyd, Oneida county, N. Y., exhibited a smut machine and buckwheat rubber, for which he claimed several improvements over other machines, especially in its power to clean without breaking the grain. We did not see it in operation, but saw a sample of grain which had been cleaned by it, and a

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parcel of the same lot before it was cleaned; judging from the appearance of the samples, we should judge very favorably of the power of the machine. We are not familiar with machines of this character, and therefore forbear from offering an opinion of its merits, in comparison with others.

POTATO HOOKS.

Six of these hooks were exhibited from H. Partridge's celebrated manufactory. They can not be surpassed, in excellence of material, beauty of workmanship, or convenience of form. Vol. Trans.

IMPROVED METHOD OF BANDING.

We saw this arrangement in connection with a thrashing machine and portable saw mill, by Dobbs and Adams, Albany. We deem it a very great improvement, and recommend it cordially to the makers of agricultural implements. We award a Diploma.

HORSE POWERS AND THRASHING MACHINES.

Badger's horse power (railroad) and thrashing machine. These much approved machines were on the ground; the horse power has been much improved since the Geneva trial, by increasing the strength of the rack plates, and contracting the length of his links from eight to four inches, which increases the power by bringing it nearer to the direction of a tangent of the circle.

Westinghouse's machines were also exhibited. The only change noticed since last year, was the introduction of an improvement in the thrasher, by which the dust is prevented from flying back in the face of the operator.

T. Sharp, of Chatham Four Corners, Columbia county, exhibited a new horse power, on the endless chain principle. It works with a rack and pinion, and is, in our opinion, a very decided improvement on this class of machines; the racks are cast in such a curve that, when stretched over a cylinder at the end of the power, they form a regular spur wheel, mashing into a pinion. While we deem this the best rack and pinion power that we have seen, we feel bound to express the opinion that none of these are as useful as the clutch and rod power, of which Emery's and

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Westinghouse's are examples. The thrashing machine is undershot and the feeding table is level.

Eddy & Dyer exhibited their Taplin's circular horse power; this machine is too well known to farmers to require description at our hands. It has repeatedly received premiums from the Society, and with the opinions of the judges who awarded them, we fully and cordially concur. They also exhibited the same thrashing machine, which has also received repeatedly the commendations of the Society. It has been slightly changed, and the exhibitors claim that it has been improved, by inserting the teeth spirally in the cylinder. We believe a farmer furnished with this power and thrasher, will not often be tempted to change. We omitted to mention in the proper place, that Eddy & Dyer exhibited a number of their iron beam plows. We avail ourselves of this opportunity to repair the omission.

Emery & Co., of Albany, N. Y., exhibited their railroad horse power, which received the first premium at the Geneva trial; we perceived no change, either in the power or thrasher, since that time. They have, however, attached to it a separator and cleaner, which meets with our hearty aproval, and which we think will be received by such farmers as use the railroad power, with much favor. It furnishes the users of railroad powers with the same facilities for thrashing, cleaning grain, and stacking straw, at one and the same time, as have been enjoyed by the users of the large circular powers, such as Pitt's, for some time past; although aiming at the same thing as Pitt's, it is not a servile imitation. Silver medal and diploma.

We regret to say that no tile machine or any species of apparatus for draining was exhibited,* nor was any wire fence, or iron hurdle fence, brought under our notice. Cheap modes of draining and fencing are the great and leading wants of the farmer, and any contrivance to diminish the labor and expense of effecting

* On the last day of the fair, after the Committee had closed their labors, Mr. J. H. Charnock, of England, arrived with a working model of a new and improved tile machine, which was examined by a special committee, and highly approved, and a Diploma and Medal awarded to Mr. C. We understand Mr. C. has located at Toronto, C. W., where his machines wil be manufactured.

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these improvements will not only confer a great benefit on the farmer, but must secure a most liberal reward to the inventor. We trust, therefore, that the attention of ingenious men will be turned to these subjects, and that next year we may see abundant evidence of their skill in our own show yard.

A premium for a plow "with newly invented principles or arrangements, not heretofore known, which on trial proves beneficial to the farmer," was offered, but there were, we regret to say, no competitors under this head. It is known to the Society, that Professor Hackley has made a complete mathematical investigation of the theory of the plow; as this is the first attempt of the kind which has been made by mathematicians, we have been very desirous to see the theory reduced to practice, especially as Prof. H. stands in the very highest ranks of science, and his theory has been approved and confirmed by Professor Pierce and Capt. Talcott, two of the highest living authorities on these subjects. We had been informed that Prouty and Mears were constructing a plow on Prof. Hackley's principles, and we hope they will exhibit its operation at the fair of 1854.

JOHN STANTON GOULD,
A. M. SHERMAN.

REPORT ON COOKING STOVES AT SARATOGA FAIR.

To the N. Y. State Agricultural Society:

The undersigned, a committee upon article No. 60, Cooking Stoves and House-heating Furnaces, respectfully report:

That they have examined the articles of the class referred to them: that the number of competitors was unusually small.

That in the stoves exhibited they find no very marked improvement, in the general construction, over those heretofore presented; the cooking stove having, for some years, been brought to a great state of perfection, with the general exception that the castings are too light, a matter in which the profit of the manufacturer has been more consulted than the interest of the house-keeper. So

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far has this objection been carried, that it may be necessary to call in the aid of the Legislature, for an act requiring stoves, particularly cooking stoves, to be sold by weight. Indeed, if this evil goes much farther the cooking stove, like the almanac, will last but one year.

The committee award the first premium to Warren, Sweatland & Little, Crescent, Saratoga county, for the best cooking stove, called the "Crescent," using wood for fuel. The construction is simple, with the usual flues passing over and under the oven. The casting is fine and of rather more than usual thickness, and the joints well fitted; with an arrangement to broil, directly over the fire, in the fire chamber, without exposure to smoke, saving the necessity of providing a supply of charcoal for that purpose. This arrangement the exhibitor claims to be valuable. The stove appears to be an economist in fuel, and is afforded at a moderate price.

For the second best cooking stove, using wood, the premium is awarded to S. B. Terwilleger, Saratoga, being "Stewart's Air Tight." This is a well arranged stove, flues passing over and under the oven, carrying the fire to the boilers in its passage; is undoubtedly a good baker, broils in the usual way. Much pains have been taken in mounting this stove, lining the doors, to prevent, as the owner claims, the heat from radiating into the room, in warm weather. The castings are of a high order, with well fitted joints. The cost of this stove is some forty per cent more than that of the Crescent, which gives the Crescent its principal advantage.

The best cooking stove, using coal, is "Stewart's," for which the first premium is awarded to S. B. Terwilleger, Saratoga.

The second best do is the "Crescent," for which the second premium is awarded to Warren, Sweatland & Little, of Crescent, Saratoga county.

A stove called the "Union of the State," was presented by John Benedict, Saratoga Springs, the arrangement and workmanship of which are of high order, and the stove is understood to have given satisfaction to those using it.

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One called "The Pride of our Union," was presented by Trim & Weeks, Saratoga Springs, of good workmanship and design.

Also the "Genesee Valley Elevated Oven," was presented by Ralph Warriner, Saratoga Springs. This is a stove which has been used for several years, and has proved a general favorite.

A great point yet to be gained in the cooking stove, is its *ventilation*, by which the steam and effluvia issuing from the articles cooking shall be passed into the flues or pipe, so that our friends may not know what we are to have for dinner, as soon as they enter the house. Any one who will accomplish this end, will prove himself a benefactor. The makers of the "Crescent" stove claim that they have done it successfully, so far as the broiling goes. Their plan appears well, but experience must test its utility.

"Chilton's Air Warming and Ventilating Furnace," was presented by Wands & Warren, Albany; to which the committee awarded the first premium. The committee think it a simple, safe and economical furnace. The furnace is afforded at $80, and the brick chamber to enclose it costs about $30 more, to which is to be added pipes and registers.

"Portable Hot Air Furnace." The committee think this possesses a good deal of merit as a heater. It is formed of light material, not as durable as Chilton's, but very portable, and can be set up for $60, furnishing its own covering, to which is to be added pipes and registers. The committee recommend a complimentary premium of a volume of the Society's Transactions.

Albert Gladwin, of Essex, Conn., presented an article, "F. Arnold's combined Stove and Lantern." It is square in form, a trifle larger than a half peck measure. It carries a lamp, securely fastened, burning alcohol, camphine or oil. The sides are an iron frame in which the mica is set. There is a small ledge of wood upon one side, and the bail, when down, forms another, to keep the feet from the heated metal, when used as a foot stove. The transparent sides make it useful as a lantern. An opening in the top plate, covered by a cast iron griddle, may be used to boil a

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small tea-kettle, or as suitable and useful to cook oysters or a chicken. It is a very convenient nursery lamp. It may be very useful as a foot stove, in cold weather. It is safe and clean, and the heat may be kept up all day, or all night, by once filling the lamp, and at the cost of 1½ cents per hour. It may be very convenient as a portable cooking stove, in travelling in the interior, or for a pic nic party. The committee think it combines a great deal of utility in a small compass, and at small expense. They recommend a premium of a small silver medal.

To Mann, Torrence & Co., of Troy, they award a premium of a small silver medal, for McGregor's Patent Cauldron Furnace, for cooking food for animals, scalding hogs, making soap, &c. It is a very convenient, portable article, occupying a very small space; and its flues are so constructed that all sides of the kettle are heated alike, and it is a great economist in the use of fuel. The committee very cheerfully recommend it to the farmers of the State.

Very respeetfully yours,

S. CHEEVER,
WM. BEEBE,
CHAUNCEY KIRKHAM,
Committee.

Saratoga, September 22, 1853.

DESCRIPTION OF 35 VARIETIES OF NEWLY INTRODUCED PEARS, EXHIBITED BY ELLWANGER AND BARRY, OF ROCHESTER.

At the last annual meeting held at Saratoga, to Messrs. Ellwanger & Barry, of Rochester, was awarded the prize for the "best exhibition of newly introduced pears, with a description of the several varieties," the following descriptions have been furnished by Mr. Barry.

1. *Baron de Mello;* size large, form obovate, tapers to the stalk, which is fleshy at the base, skin rather rough, covered with light

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russet, flesh melting, juicy, vinous, and high flavored, akin to Brown Beurre; October; received also under the name of "*Adèle de St. Ceras;*" tree a good grower, succeeds on the quince.

2. *Beurre Clairgeau;* very large, long pyriform irregular, skin greenish yellow, marked with russet, sunny side dull red, flesh melting and juicy, with a sprightly vinous flavor; Oct. to Nov.; tree is a good grower and early bearer, succeeds on the quince.

3. *Beurre Superfin;* large, obovate, short pyriform, yellowish green, mostly covered with light russet, flesh melting, buttery, vinous and high flavored; October and November; tree is a fair grower and an early and abundant bearer, succeeds on the quince, very much like Brown Beurre.

4. *Beurre de Koning;* medium or rather large, turbinate, yellow with russet dots, sunny side marked with light red, flesh melting, buttery and high flavored; resembles the White Doyenne; tree a good grower and abundant bearer, fruit usually borne in clusters, October.

5. *Beurre de Hardenpont;* medium to large size, pyriform regular, skin dull greenish yellow, covered with russet dots, which are prominent and give a peculiar roughness to the skin, flesh yellow, melting, juicy and sprightly; excellent; October; tree a fair grower, hardy and a most abundant bearer, succeeds well on the quince. This variety is known at Boston as *Beurre Judes* and *Long de Mont Kowty;* it was known under the latter name at Saratoga, in the collection of Messrs. Hovey & Co.

6. *Beurre Gris d'Hiver Nouveau;* known abroad in some catalogues as *Beurre Gris Superior* and *Beurre de Lucon*; large, turbinate, inclining to oval, dark brownish russet, melting, sprightly, and high flavored. Tree resembles in habit the Brown Beurre, but is more vigorous, bears young and abundantly. This may prove to be a very valuable pear, but for two seasons past, the trees have shed their foliage early, and the fruit has been attacked with the well known black fungus. Our last season's crop, though large and fine, were entirely destroyed by it, before their season of maturity. November to January.

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7. *Bezy Sans Pareil* or *Bezy Incomparable;* medium to large, roundish, or inclining to oval, dull yellow, melting sprightly and agreeable, keeps well till March, ripens easily and the tree is a vigorous grower and most abundant bearer; promises to be a very valuable variety; resembles in form the Doyenne Sieulle, though not so regular; succeeds well on the quince.

8. *Bezy de Veteran;* large to very large, pyriform oval, stalk very long and slender, skin greenish, becoming lemon-yellow at maturity; flesh half melting, sweet and agreeable, not high flavored; keeps well till May; tree very vigorous and erect; succeeds well on the quince.

9. *Beurre Nantais;* large, pyriform, long, skin smooth pale greenish yellow, melting, buttery, sweet as honey. Septemb. and October. A large and beautiful pear; tree erect, vigorous and handsome, succeeds well on the quince.

10. *Colmar Van Mons;* medium size, obovate, skin very smooth, greenish yellow, with a red cheek, flesh fine, melting, delicious; tree a fair grower and most productive, succeeds well on the quince, resembles and may be identical with the variety known as *Surpasse Virgalieu.* September and October.

11. *Colmar des Invalides;* large, obovate pyriform, rather irregular and occasionally furrowed, clear yellow, handsome, flesh firm, half melting, good, keeps well till February or March; tree a fair grower and good bearer.

12. *Colmar Bonnet* (Van Mons); size medium to large, obovate, yellow, marked with red on the sunny side, melting, sweet, excellent. September. Tree a fair grower, succeeds well on the quince.

13. *Chaptal;* large to very large, obtuse pyriform, variable, greenish yellow, somewhat marked with russet, keeps till April or May, is seldom fit for the table, but is excellent for cooking. Tree vigorous and fruitful, succeeds well on the quince.

14. *Duchesse d'Orleans* (St. Nicholas); large, oblong pyriform, greenish yellow with slight traces of russet, faint marks of red in

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the sun, often bright red; flesh melting, juicy, delicious; one of the most beautiful and excellent pears. October. Tree moderately vigorous.

15. *Doyenne Goubault;* large, obovate, broad and flat at the crown and tapering abruptly to the stalk; skin dull yellow with thin marks of russet, and occasionally a red cheek; flesh melting, juicy, sweet and fine flavored, keeps remarkably well, usually have them in good condition as late as March and even April. Tree rather unthrifty in its appearance, a poor grower and very distinct in foliage; bears freely.

16. *Doyenne d'hiver d'Alencon*, Doyenne d'hiver nouveau, St. Michael d'hiver; medium in size, turbinate, inclining to oval, dull yellow at maturity, marked with red on the sunny side, often a bright red cheek. Flesh melting, juicy, rich and fine, somewhat gritty at the core. January to April. Tree remarkably vigorous, makes a superb pyramid, without great care; succeeds well on the quince.

17. *Doyenne Rose;* a large and beautiful pear, like a superb highly colored Virgalieu, but in quality ranking scarcely "good." Tree vigorous and very productive. October.

18. *Delices de Lowenjoul* (Bavay); medium to large, obovate, acute pyriform, yellow with a handsome red cheek; melting and fine. October. Tree vigorous and bears young, profusely in clusters.

19. *Comtesse d'Alort;* a very distinct variety, oval pyriform, with a stout straight stalk and small calyx level with the surface, skin greenish yellow with very faint touches of red in the sun; melting buttery, with slight astringency; good, October. Tree productive.

20. *Elise de Heyst*, Belle Caennaise; medium to large size, roundish obovate, slightly flattened at the stalk or at both ends; skin pale whitish yellow, roughish covered with small dots; flesh melting juicy and agreeable, not high flavored; slightly gritty at

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the core. Tree a good grower and very productive; probably same as *Bergamot Sageret*, if not the same, as near as may be. November till February.

21. *Grand Soleil;* medium to large size, roundish, skin covered with light yellow russet, flesh melting, juicy, rich and delicious. October and November. Tree bears young, a fair grower.

22. *Josephine de Malines;* medium size, roundish, tapering to the stalk, which is pretty long and stout; pale yellow, with sometimes a slight reddish tint next the sun; flesh melting, juicy and good; keeps remarkably well. March and April. Tree a moderate grower; produces its fruits on the ends of young shoots and spurs; akin to the Passe Colmar.

23. *Jones' Seedling;* origin Penn. near Philad., rather small, obovate, skin covered with russet, becoming light yellowish at maturity; flesh buttery, melting, sweet and highly perfumed. Oct. Tree a very vigorous and handsome grower. A handsome and excellent little pear.

24. *Fondante Charneuse*, Beurre de Waterloo; large, pyriform acute; stalk long and pretty stout; skin yellow with tracery of russet, and marked with red in the sun; melting and delicious. Tree vigorous and productive, resembles the Bartlett. October and November.

25. *Kingsessing* or *Leech's Kingsessing* (Brincklé); originated near Philadelphia; large roundish turbinate, slightly flattened at the stalk; skin greenish yellow, with a bright red cheek, resembles Stevens' Genesee, but is not so round, nor so much dotted over the skin; flesh melting, juicy and delicious; best quality. Tree a good grower and succeeds well on the quince. September.

26. *Liberale;* a large pear resembling the Dix; obtuse pyriform, greenish yellow with a marbling of dark russet; flesh a little coarse, melting, juicy, sweet, and good. Tree a fair grower, succeeds on the quince. September and October.

27. *Jalousie de Fontenay Vendée;* medium to large, turbinate pyriform, smooth and regular, dull greenish yellow, frequently co-

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vered with a marbling of russet; flesh melting, juicy, sprightly, sub-acid, excellent. Tree a vigorous grower and most abundant bearer. September.

28. *Paul Ambrée;* a very beautiful and fine fruit, medium to large size, skin smooth yellowish green, with a red cheek, flesh fine, melting, juicy, sweet and agreeable, very good. September and October.

29. *Paul Thielens;* large, roundish, surface uneven, stalk long; beautiful yellow and red skin, flesh melting juicy, but rather astringent. Tree a fair grower and an abundant bearer. October and November.

30. *St. André;* large, turbinate, regular, skin smooth, greenish yellow, in the shade, tinged with red in the sun; flesh fine grained, melting, sweet and delicious. Tree a fine grower and good bearer; succeeds well on the quince. Last of September and beginning of October.

31. *Suzette de Bavay:* medium size, roundish turbinate, greenish yellow, with a marking of dull red on the sunny side; flesh melting and fine flavored; keeps without difficulty till April. Tree a magnificent grower, forming a natural pyramid; succeeds well on the quince.

32. *Triomph de Jodoigne* (Bouvier); very large, pyriform, turbinate, greenish yellow, often with a dull red cheek; flesh melting juicy, sprightly sub-acid. Tree vigorous but irregular, naturally disposed to form a spreading bush; succeeds well on the quince. November.

33. *Van Assche* (Bouvier); large obovate, obtuse, usually with a furrow on one side, pale yellow with a handsome red cheek; flesh melting, juicy, good. September and October. Tree a fair grower and an early bearer, succeeds well on the quince. See vol. 3, New Series, Hort.

34. *Zepherine Gregoire;* medium, pyriform, acute, often turbinate, yellowish green, sprinkled with rough russet dots; flesh melting, juicy, rich and delicious. Tree vigorous and productive, November. A very excellent variety.

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35. *Theodore Van Mons*; large, obtuse pyriform, inclining to obovate, skin yellow with traces of russet; flesh melting juicy, sweet and agreeable; not high flavored. Tree vigorous, makes a fine pyramid, succeeds well on the quince. November.

Note.—Nos. 1, 2, 3, 5, 10, 14, 24, 25, 27 and 30 have already been pretty well tested, and are generally considered as ranking among the very best pears in cultivation. Nos. 6, 7, 11, 15, 16, 22 and 31 are valuable as good keeping winter sorts, are hardy and productive. Some of the new autumn varieties are of less value, as, although they are of the first quality, good size, &c., yet they come in at a time when the best old sorts are abundant.

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COMMUNICATIONS, &c.

THE MANUFACTURE OF SUGAR FROM BEET-ROOT,

BY JOHN WILSON, F.R.S.E., F.G.S., &C., LATE PROFESSOR OF AGRICULTURE IN THE ROYAL AGRICULTURAL COLLEGE, CIRENCESTER, ENGLAND.

SECTION I.—"*The cultivation of the root for this purpose in France, Belgium or Germany, and the extent to which high manuring affects its saccharine contents.*"

The original type of our garden and field beet, or mangold-wurzel, is the *Beta maritima*, or sea-beet, an indigenous plant, found growing wild on many parts of the sea-coast, especially where an argillaceous formation borders the sea line. In such cases it possesses a somewhat fleshy root, a tall branching stem 3 to 4 feet high, with narrow dark-green leaves, which in many places are gathered and eaten readily as a pot-herb. The cultivated varieties are the *B. hortensis*, called, also, *B. cycla* or Chard beet (which is cultivated for its leaves alone, the central part or mid-rib being very fleshy, and considered, when cooked, a delicacy), and the *B. vulgaris*, which comprises the red beet of our gardens, and the white or Silesian beet, both of which are well known as containing a large quantity of sugar. The variety with which we are best acquainted, the mangold-wurzel, has been supposed to be the result of a cross between these two, and thus possesses certain physical characteristics of them. As the object of this paper is not to treat on the cultivation of mangold-wurzel *generally*, but merely *specially* in its relations with the manufacture of sugar, we need only mention that there are several dif-

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ferent varieties of this mangold-wurzel, which are grown indiscriminately in most counties in England. Up to the present time but little attention has been paid to their relative saccharine properties; their feeding values and their suitability for different soils seem to be the only results of the imperfect investigations to which they have been hitherto submitted. On the Continent, however, the necessities of the people brought the root prominently into notice, some forty years ago, as being an indigenous source from which that sugar, so necessary to the comforts of life, could be obtained, which by the Continental Decree of Napoleon they were debarred from procuring from the customary sources, the cane-growing islands of the Atlantic and Pacific. This industry, called into existence by the arbitrary power of the then ruler of the Continent, and belonging entirely to the present century, has been so widely distributed, and so largely carried out, that its condition is far more advanced, as a scientific manufacture, than that of the extraction of sugar from the cane, which dates some centuries back. In its early days it had much to contend against; our acquaintance with organic chemistry, was very defective—agriculture had necessarily been much depressed by the unsettled state of the Continent—in some countries fiscal regulations obstructed both experiments and improvements. Now, however, these days are past, and it represents one of the most flourishing and most important of all the manufactures connected with agriculture. In Russia, Germany, Austria, Belgium, and France, the farmer is called upon each year to increase his production of the raw material, and science is every day adding to the beneficial consumption of it by the manufacturer.*

In these countries beet is always looked upon as a fallow crop,

* In Russia the entire consumption of sugar amounts to 85,000 tons, of which 35,000 tons are made from beet-root.

In Germany (the Zollverein), in 1848 the quantity of beet sugar made was 26,000 tons; in 1851 it had increased to 43,000 tons, the consumption of cane sugar decreasing in the sam proportion.

Austria consumed about 40,000 tons of sugar, in 1848, of which 3,000 were made from beet root: this quantity was doubled in 1850.

In Belgium, the consumption of sugar is about 14,000 tons, of which 7,000 are made from beet-root, and the number of establishments were nearly doubled in the last year, which, of course, will materially add to the rate of production.

In France, the annual manufacture of beet-root sugar, amounts to 60,000 tons, which is about half of the quantity consumed, with an increasing rate of production.

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and is selected, as much as possible, for the more argillaceous portions of the farm in that part of the course of rotation. Of course there are various modes of growing it in different countries, dependent on the soil, the climate, and the requirements of the markets. In all cases, however, it is considered good farming to let it both *follow* and *precede* a straw crop. In the first case, the stubble of the preceding crop being plowed in has a mechanical as well as chemical action on the soil, keeping it light and open, and thus more accessible to the influence of the weather during the winter, a matter always of importance on strong soils, but particularly so in countries where the various accessory implements are not so readily obtainable as with us. In the second case, the cultivation necessary to secure a good crop of roots—the deep plowing, the fine tilth, the hoeing, weeding and stirring the soil, and the peculiar mode of harvesting, all tend to leave the land in a condition exactly suited to the requirements of a grain crop. In all cases the preparatory tillage and condition of the soil are carefully attended to; the seed is sown as we sow it, sometimes on ridges, but more commonly on the flat—by hand, usually broadcast, or by dibbling. In the most improving districts, especially in France (Department du Nord), a machine is used for sowing it in drills.

The same practice of steeping the seed is found to be advantageous on the Continent as with us; the wrinkled epidermis absorbing sufficient moisture, by immersion for from twelve to twenty-four hours in water, to enable the germinating process to be set up by the seed much more readily than if it had to rely on the soil for its necessary supply of moisture. This practice, however, is affected by the soil and also by the season. If the soil is of a light porous character, and the weather dry, it would perhaps be injurious to the germinating seed or to the young plant to be thus accelerated in its growth, as without a continued supply of moisture, it could not exist; under ordinary circumstances, however, it advances their growth considerably.

In the vicinity of large towns, where the land is generally more subdivided, the facility of disposing of the beet to the sugar factories, and of obtaining a large supply of ready-made manure in

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return, induces the cultivators to grow the crop year after year successively on the same ground. This system may be carried on for many years with a certain amount of success, but, sooner or later, the bad policy of such a practice is shown by a great deterioration in the crops, both in quantity and in saccharine properties—the one resulting, probably, from the attacks of insects peculiar to the plant, which year after year have been bred in the soil, and increased with each succeeding crop; the other due, probably, to some fungus or vegetable parasite, feasting on the diminishing vitality of a plant debilitated by being grown constantly on the same soil. In 1846 a disease of this character was noticed, both by Kühlmann, in Belgium, and by Payen and Crespel, in France.* The leaves of the plant became withered—reddish-brown spots appeared upon the skin, penetrating the interior of the plant—the flesh became hard and woody—the juice dried up, and showed an *alkaline* instead of an *acid* reaction—and the sugar was viscous, and would not crystalize. The fungus appeared to be very similar to that of the potato disease.

The after operations consist in singling out the plants to certain distances, when they are about two or three weeks old—in filling up vacant spaces and carefully keeping the land clean—and in pulling up those which run to seed. Analysis has shown us that the portion of the root exposed to the light contains less sugar than that which is buried; it would therefore be, no doubt, advantageous to mould up the roots after the last hoeing, and thus protect them from it.

In some parts of Germany and in Belgium it is the practice to sow the seed in a separate piece, and thence transplant the young plants to the field. By this method, in North Germany and in Russia, where the seasons are more rigorous than with us, they are enabled to accelerate the time of harvest by fully a month or six weeks, a matter of great importance to the preservation of a root so susceptible of frost as the beet. Köchlin states, that it saves two months in the ground, and that in ordinary seasons it gives an increased return in the proportion of eight to five.

* Annales de l'Agriculture, tom. xvi. (1847.)

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In Belgium some of the farmers avail themselves of the same practice, and manage to obtain a crop of beet, after having harvested a rye or a flax crop. Either of these is ready early in July—the stooks are shifted in the field to get out of the way of the plows, which are sent in as soon as the crop is down—the liquid manure carts, conveying the sewage of the house and stables in which rape-cake is dissolved up, accompany the planters, and give a certain portion of their contents to each plant as it is dibbled into the field. All good farmers, whether abroad or at home, agree upon the necessity of keeping their fallow crops at any rate clean: this, carefully attended to, is all that is required between the time of transplanting and of harvest.

The peculiar organization of the beet-root requires great care to be exercised in harvesting the crop, as the slightest injury to it is sure to be followed by a proportionate loss of sugar, if intended for the manufacturer, and by a tendency to decay, if intended for storing. To the farmer who uses the root for his cattle, this is of but small importance, as compared with its effect on the manufacturer, as immediately fermentation is set up, the crystallizable sugar is converted into a sweet mucilaginous compound (similar to mannite, $C._6 H._{14} O._6$), which will not crystallize, and is consequently lost. Fine dry weather should be selected for the operation, and especial precautions should be taken to preserve the roots when stored, from wet and frost. It is always desirable that they should be exposed on the ground for three or four days before they are stacked, in order that they may lose as much of their moisture as possible. This is the more important if they are to be used for sugar making. When stored on the farm the most effectual plan is to select a dry and suitable locality, to pile the roots between two rows of hurdles, set at about 6 to 8 feet apart, and then build them up from the top of the hurdles in a long pyramidal form. A second row of hurdles should then be set all round at a distance of about 9 inches from the others, and the space between the two rows filled up with loose straw, well pressed down; a good thatch should be laid over the centre, the eaves coming well over the outer hurdles. By this method, which permits perfect ventilation, while it protects the contents

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from the severests frosts, the crop may be preserved quite fresh, until the end of the season. If the crop is sold from the field to the manufacturer, he generally finds it more convenient to erect permanent storehouses for its reception, in which he can readily secure it from frost and wet.

Our information respecting the action of manures upon the crop is far from satisfactory. In this country, where it is only grown for cattle feeding, we look more to the general bulk than to the character of any one of its particular constituents. For sugar purposes, however, we must look at it in a special manner, as, to a certain extent, the interests of the producer and the consumer are here opposed to each other. The producer would, of course, like to see as heavy a crop as he could obtain; the manufacturer cares less about a heavy crop, or even a large amount of crude sugar, than for a crop that shall yield him a pure sugar, mixed up with a smaller proportion of the other accompanying ingredients, which always considerably affect the cost of manufacture, and necessarily reduce the amount of crystallizable sugar. In the process of the manufacture a portion of the sugar must always be lost, and this proportion increases with the amount of impurities in the juice. It is important that this should be understood by the producer, so that he might supply the desired variety, and thus meet the interest of the consumer and keep the two departments distinct. On the Continent in many places this has been disregarded, and the consumers have been forced to turn farmers and grow beet for their own works. It would therefore appear, that we should endeavor to increase the proportion of sugar, without increasing the saline constituents of the crop; and the heavier our crop obtained under these conditions, the better for both producer and consumer.*

Organic manures, if in a proper state, are found to increase the crop; but soluble saline manures injure the value of the sugar. Thus salt, though an essential ingredient of the plant, acts prejudicially if in too large quantities. At Mannheim a field adjoining the salt-works was planted; a large crop was produced, but the percentage of sugar was lessened, and the yield was deficient.

* Notes sur un projet d'expérience, ayant pour but d'augmenter la richesse saccharine de a Betterave, par M. L. Vilmorin, (Annales de l'Agriculture, tom. xxii.)

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Ammoniacal manures increase the bulk, but are found to add so largely to the proportion of organic compounds and water as to render the subsequent operations more expensive.

Boussingault (Economie Rurale) recommends that the land should be kept in good condition by manuring; and Gasparin (Cours d'Agriculture, t. i. p. 655) states that the growers in the Département du Nord consider that the addition of farm-yard dung increases the bulk of the crop in the proportion of 1.65 tons for every ton of dung applied. M. de Dombasle (Annales de Roville, t. vii. p. 255 upon a poor soil found the resulting increase to be only about half as much; and M. Crud (Economie de l'Agric., § 255), upon a naturally rich soil (Boulonnas) obtained an increase equal to 2.* Thus we see how little value can be placed on results which are affected by climate, soil, and even difference in seasons. In the principal sugar-making districts, however, it is found that by manuring the land either two or three years previous to the beet crop, the greatest number of conditions required by the manufacturer are obtained. This practice is supported by the evidence of Schatten, who found that the expressed juice contained more coloring matter and soluble salts when it came from roots grown on freshly manured soil.†

There are papers on the cultivation of beet and on the results of manuring, &c., by Mr. Miles in the 2nd, by Lord Lovelace in the 4th, by Mr. Pusey in the 6th, and by Mr. Raynbird in the 8th vols. of the Royal Agricultural Society's Journal, which, although

* At a recent meeting of the Royal Agricultural Society (April 21st), Mr. Gadesden, of Ewell Castle, in describing Mr. Reeve's mode of cultivating sugar beet and mangold-wurzel at Randall's Park Farm, near Leatherhead, stated that his crop last year was 38 tons 16 cwts. to the acre of the former, and 39 tons 13 cwts. to the acre of the latter. Mr. Reeve attributed his success in growing the white sugar beet to his not applying manure *directly* to the crop, and stated that when he had dunged for the beet, the bulbs proved small, and had a large mass of "fuzzy" fibres, and gave but a small weight per acre, viz. from 15 to 18 tons, but that since he had put his manuring matter further off the beet crop, he had raised fine large roots of a great weight per acre.

† The juice was treated with lime and acet. of lead, both before and after filtration, and gave the following results:

	Before.	After.	
Lime,	.169	....	Fresh Manure.
Acet. Lead,	1.120	.916	Fresh Manure.
Lime,	.179	....	3d Year.
	.147	....	3d Year.
Acet. Lead,	.514	.426	3d Year.
	.686	.502	3d Year.

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bearing but slightly on the present object, may be referred to with advantage.

SECTION II.—"*Whether mangold-wurzel is applicable to the manufacture of sugar.*"

The field beet, or mangold-wurzel, is that variesy which presents, on being cut open, alternate layers or zones of a white and red color more or less distinct, and is grown in Germany and France extensively for the purpose of sugar making. It gives a heavier return per acre than the white or Silesian beet, but this latter contains a higher percentage of sugar and a lower percentage of water and of saline matters, a combination of properties which renders it more valuable to the manufacturer. It also is less liable to mechanical injuries, and is less likely to be affected by frost or wet. It is, however, more particular as to climate, and consequently does not succeed so well in general cultivation as the mangold-wurzel, which appears to be grown successfully for the purposes of sugar extraction at all places between 45° and 56° N. lat.

Before commencing an account of the operations connected with the extraction of sugar from beet-root it may be as well to describe briefly its structure and composition. If we take a root, and cut it down or across, we shall see that it is composed of concentric zones or layers, differing in color, more or less according to the variety. The exterior, or skin, is composed of a peculiar compact cellular substance, containing mineral and azotized matter, immediately beneath which lies the herbaceous tissue, containing the coloring matter, an essential oil, and several other peculiar organic compounds; then succeed the concentric zones of vascular and cellular tissue. In the cellular tissue is deposited the saccharine matter, the proportion seeming to be greatest in those cells immediately in contact with the vascular tissue.

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A. The zones or layers composed of vascular and cellular tissue, in which the crystals of sugar are contained.

B. The germ, connected by a pecular tissue with the tap and side root, and which contains a large proportion of the saline matters, but no sugar.

C. Tap and lateral roots: the latter not necessary, and consequently prejudicial to the yield of sugar.

On dividing the root, and exposing it to the air, zones or layers, shown by dark colored marks, may be seen; the cells on either side of these appear under the microscope to contain the largest amount of crystals.

Without enumerating the several substances, some 25 to 30 in number, found in the root, we may comprise them all in the following analysis, which will be sufficient for our present purpose, merely referring to those more prominent ones which affect the manufacturing processes. We will say then that the root consists of (the average of several analyses)—

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Sugar,	10
Soluble salts, pectin, certain azotized compounds, &c.,	3
Water,	33
	96
Woody fibre, insoluble salts, albumen, and other azotized compounds,	4
	100

These are mean quantities; in many samples a higher per centage of sugar has been found. Péligot* and Pélouze have both certified that the whole of the sugar is crystallizable: this has been verified by other chemists, therefore it is quite possible to increase the per centage at present obtained in the manufactories. To the able researches of Péligot we are indebted for much valuable information relative to the chemistry of the beet-root, not the least important of which is that the root has the same composition at all periods of its growth, but that the relative proportions of water and other compounds are determined principally by the development and age of the plant, the increase in bulk being due to the increased development of the parenchyma of the cells, rather than to either the number or the size of the cells themselves. Thus, although at one period the entire bulb might be found to contain, say, 10 per cent. of sugar, and at another only 8 per cent., still the actual quantity might be the same, the difference in the per centage being due, not to a diminution in the sugar, but to an increase in the other substances. Hermann also found that the watery character of the bulb increased with its development, which reduced the per centage, or apparent quantity, of sugar. This may be seen in the following table:

Percentage of sugar,	11.4	9.4	8.5	7.4
Relative weight of roots,	6	13	23	45

This fact might be applied advantageously in the field, both by affording to the grower an opportunity of harvesting his crop at an earlier period, either to meet the other operations on his farm or to secure fine weather, and also by enabling him to set

* Recherches sur l'analyse de la Betterave à Sucre.

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his plants closer together on the ground, and thus directly increase his returns. Besides ths sugar, the azotized compounds and the salts are the only constituents to be noticed; these are always present in the juice, and are the great obstacles in the process of manufacturing, the one being the great inducer of fermentation, and both opposing the process of crystallization. These compounds exist in several different conditions; the two principal ones, as far as our object is concerned, are, albumen, which coagulates at boiling point, and is removed in the defecating operation—and another of a peculiar nature, which, when exposed to the air, either in the sliced root or expressed juice, is rapidly oxidized, becoming first red, then brown, and lastly black. The other compounds have no particular action, and seem to be very irregular in their proportions. The salts will be noticed in section IV.

SECTION III.—"*Manufacture of sugar according to the latest improved processes.*"

The process of sugar-making from beet-root may be divided into two parts—the extraction of the juice from the root, and the extraction of the sugar from the juice. The first consists of three operations: washing; rasping, grating or slicing; pressing, or macerating, according to the process followed. The second consists, also, of three operations; clarification or defecation; filtration—this is usually performed twice, the syrup being partly evaporated before the second takes place. Crystallization.

Washing.—The first operation is to thoroughly cleanse the roots of any foreign matter in the shape of soil, stones, or manure that may be attached to them. This may be effected by a machine similar to that used for washing potatoes—Crosskill's is perhaps the best—care being taken that the water shall be changed as often as may be necessary. This is an important point to attend to, on account of the subsequent operations of rasping and pressing—the first of which would be prejudiced by any stones or grit remaining attached to the root, while the other would be affected injuriously if the expressed juice or liquor were tainted by any organic matter remaining after the washing. The process of rasping is now always preferred to either crushing

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or slicing the roots, the great object being to break up all the cells in which the sugar is deposited, and this is effected in a greater proportion by the rasp than by any other process. The form of the rasping-machine should be cylindrical, and arrangements should be made that the roots are supplied to it *regularly* and with a slight pressure, so that they may be kept in constant contact. Practice has shown that the higher the speed at which this machine is driven, the finer and more pulplike will be the particles removed, consequently the cells will be ruptured to a greater degree, and a higher per centage of their saccharine contents rendered obtainable. From 800 to 1,000 revolutions in the minute, is the speed at which they are driven in most of the large establishments. It is found that sometimes the teeth of the rasp will become blocked up by small particles of the root, and then, owing to the rapidity of rotation, will pass over fresh surfaces without biting them: to obviate this, a small jet of water is allowed to trickle over the cylinder, which keeps it clear of such impediments, and mixing with the pulp, falls down into a vessel placed beneath to receive them. The water, in this instance, performs a double service, as it not only keeps the rasping surface true, but by a peculiar physical action, termed "*endosmose*," it extracts a fresh portion of sugar from the pulpy mass, and thus renders the expressed juice of greater value.

Having now reduced the mass into a condition suitable for the next operation, that of separating by pressure, the liquid from the solid parts, some points of importance present themselves. The usual mode of effecting this separation is by enclosing the pulp in stout woolen or flax bags, and submitting it to hydraulic pressure. Practically, it is found that a circular shape is the best for these bags, as the pressure is more equally dispersed, all the particles being driven from a common centre, and there are no corners. It is found also that the bags should be at first submitted to a very slight pressure only, so that the juice, which is very abundant, may have time to drain off. In this way several bags are piled on each other, a perforated or channelled metallic plate being placed between each; then a force, small or great, as may be desired, is applied to the top, and transmitted through the entire column. When the drainage is completed, they may

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be submitted to a higher pressure, which should be gradually applied at first, and increased more rapidly towards the end of the operation. After remaining in the press, say 10 to 20 minutes, the pressure should be removed, and the bags reversed so that their points of contact be changed; the machine should then be again put in action, and its highest power applied. By the first, from 30 to 40 per cent. of the juice is obtained, and by the two last pressings from 40 to 45 per cent. more; about 80 to 85 per cent in all. As the pulp in this state contains all the elements and conditions necessary for fermentation, which would materially affect the yield of crystallizable sugar, it is considered advisable to dip the bags, between each part of the operation, in a weak solution of *tannic acid* (2 to 3 parts in 1,000), which combines with the azotized principles of the external surface in contact with the air, and prevents their change. In the case of warm weather, or of any portion of the roots being injured, this precaution is doubly necessary. Such is the ordinary way of extracting the juice from the root. In some places the bags are again immersed in water (containing tannic acid), and again submitted to a high pressure, by which from 5 to 10 per cent. more of the juice may be obtained. There are other methods of treating pressed cake, in order to obtain the remaining portion of its saccharine contents; but it is admitted practically that, under the most favorable conditions, from 5 to 10 per cent. of the juice, = to 1 per cent of sugar, are lost, or rather are left in the cake. These methods are based upon the ordinary arrangements of beet-root cultivation, which requires that, at a certain time of the year, the roots should be removed from the soil, and then either used in a fresh state, or stored away in such a manner that they shall remain uninjured and unaltered until they are required in the manufactory. This necessitates either a very large amount of stowage room, with all its risks and expenses, or else that the work should only proceed during a certain period of the year, both of which points are matters of serious importance to the proprietors.

To meet these objections, Schützenbach, a German chemist, proposed that the fresh root should be at once sliced up into thin pieces, and then desiccated at a certain temperature, by which

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not only would all, or nearly all, the water be driven off, and thus considerably reduce the weight and bulk of the mass, but also the albuminous compounds would be coagulated, and in that condition rendered less soluble, and at the same time less liable to any subsequent fermentation. This method has been carried out extensively in Germany, at Ettlingen, for some years past, and has more recently been adopted by one of the first French makers at Valenciennes.* In these establishments the root is cut up into cubes or parallelopipeds, and from 80 to 84 per cent., of water is evaporated, leaving only from 16 to 20 per cent. of dry matter. It is found practically advantageous to sprinkle the cut roots with charcoal or with lime in fine powder, in order to check the tendency to fermentation, which is set up immediately the cells are separated. Of the two lime is the best, as it also neutralizes any organic acids which may be formed. It is also necessary that they should be removed as speedily as possible to the drying-house, which may consist of a series of wire trays or shelves, or any similar arrangement, through which a current of dry air, of not less than 100° and not more than 150°, should be passed. When quite desiccated they may be stored away as they are, or reduced to a coarse powder, and will thus keep unaltered for any time until they are wanted in the factory. For use they must be ground, and the coarse powder be then macerated in about 36 parts of boiling water, in which Schützenbach recommends from 2 to 3 parts of sulphuric or sulphurous acid should be mixed. It is generally arranged that the dried powder shall be placed in a range of vessels of different levels communicating with each other, so that the water shall pass through the uppermost, and dissolve out its contents previous to passing on to the next. In this way a clear and more concentrated syrup is obtained, thus effecting a great saving in the fuel and risks consequent on the evaporation. This method (Schützenbach's) has

* In a communication from M. Paul Hamoir (Serret, Hamoir, Duquesne & Co.), we are informed that the practice followed in their establishment secures a more certain yield of sugar, as the roots are used when their saccharine properties are in their highest development. If they are taken from the field, and stored even under the most favorable conditions, the quantity of crystallizable sugar is found practically to diminish, according to the time they have been kept. For instance, if the fresh root yielded in October 7 per cent. of sugar, in January it would only give 5 per cent., and in February probably less than 4 per cent.

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been condemned in many districts, on account of the increased expenditure, required in buildings for the drying operation, and in the fuel necessary for the evaporation of the 36 parts of water subsequently added. In this country, where fuel is so cheap, and where desiccation on a large scale is so constantly employed in manufacturing concerns, these objections, probably, would not have much weight.

We must now consider the various operations forming the second part of the process. After having obtained all the available saccharine juice from the root, by one of the foregoing methods, the next operation is that of clarifying or defecating. To effect this, several modes have been devised. The only one which we think, however, necessary to give here is the lime process, which is the simplest, the most general, and the most readily understood and carried out.* The juice is placed in a large pan (metal), heated by steam in the usual manner, and evaporated down to a certain specific gravity; a certain quantity of hydrate of lime is then added, and the boiling continued until the whole of the changes effected by the lime have taken place. These changes are most important. The lime, uniting with the albuminous and gummy matters, forms insoluble compounds with them; the free organic acids are neutralised; and, consequently, all the salts held in solution by them (malates, phosphates, &c.) are precipitated, most of which, save the alkalis, are decomposed, and insoluble salts of lime formed; the fatty and coloring matters, to a great extent, are also destroyed. If an excess of lime be left, it combines readily with an equivalent of the sugar, and forms a distinct compound, which is afterwards decomposed in the decolorizing operation. Achard recommends that this excess

* The process due to M. Melsens, in which acid sulphites, and more especially bisulphite of lime are employed, is adopted in some districts on the Continent. These salts effect a double purpose, checking fermentation by the presence of sulphuric acid, and neutralising the sulphuric acid as fast as it is formed by means of the lime. (See Phil. Mag. 1850.)

A process, very similar in its action, was patented in 1849, by Messrs. Price and Reece, which includes the application of both acid sulphites and hyposulphites. (See Repository of Patents, No. 85.)

In 1849, Messrs. Oxland patented a process for defecating and decolorising sugar, by means of acetate of alumina, &c.; and in 1851, they took out a second patent for the use of phosphoric acid in a state of combination with certain alkaline bases for the same purpose.

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of lime should be at once taken up by sulphuric acid; this compound, is, however, by many considered to be more prejudicial to the sugar than the other compound. Kuhlmann, instead of sulphuric acid, takes up the excess of lime by carbonic acid. The various compounds resulting from the mixture of lime with the juice at a high temperature, are removed either in the shape of a scum from the surface, or by decanting the clear syrup from the dregs, occasioned by the precipitation of those that were insoluble. In boiling, the liquid should be of a clear yellow color; if the boiling commences in the middle before the sides, it is considered a bad sign; and the scum should be thick and tough, and full of irregular fissures. The refuse of the clarifying pans of one of the large factories, at Magdeburg, was examined by Schmidt, who found it to consist of albumen, azotized matters resembling gelatine, others resembling humus, a soap formed of lime and fatty substance, oxalate of lime, phosphate of lime, sand, &c. It is very desirable to ascertain, as near as possible, the proportion of lime to be added to the juice; as, although an excess does no direct injury, it may occasion some loss in the produce. However, this must in most cases depend upon the condition of the syrup, whether it is made from perfectly sound roots or not, and the period of the season. If the roots are sound and fresh from the soil, then less lime is required than if they had been at all injured, or stored away for any time. In the former case, about 3 to 5 parts of lime, to 1,000 parts of juice, are sufficient; in the latter, from 5 to 10 parts to the 1,000, according to the requirements of the case. Some care is needed in the preparation of the lime, which must be carefully slaked (hydrated) by mixing it with about 10 parts of boiling water, and then passing it through a fine wire sieve, so that all impurities and lumps may be separated. When the clarification is completed, the syrup is removed as hot as possible to the filtering-room, where it is passed through layers of animal charcoal in the ordinary way. This operation is usually repeated, the syrup being evaporated to a greater density previous to the second filtration.

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These two operations remove any impurities that may have passed from the clarifying pans, the excess of lime, and all the coloring matter of the syrup. The only portion of the process now left is to concentrate the decolorized syrup, and then run it into moulds to crystallize, and thus be rendered fit for market. This is a very simple operation, and is so largely carried out in the refining of cane sugar in this country, that it needs no further description than that the points to be attended to are the regulation of temperature of the boiling-pans, and the density at which it is run into the pots or moulds. The larger portion will assume a solid crystalline form; the remainder, which consists of sugar partly altered by oxidation, termed molasses, and holding in solution the alkaline salts, is left to drain out from it slowly, or may be drawn off by mechanical means.

SECTION IV.—"*Disposal of the refuse for the distillation of spirits, extraction of salts, or feeding of cattle.*"

We have now obtained from the original root three distinct substances—the solid pulp for cake, the manufactured sugar, and the molasses or refuse. The first comes from the presses in the shape of a hard, solid cake, usually equal to from 15 to 20 per cent. of original bulk or weight of roots employed. It is of a nutritive character, and is well adapted for cattle food, for which purpose it is largely consumed. We are not aware of any direct analysis of it; but, judging from the composition of the root, and of the matters abstracted by pressure, we may form a tolerably accurate estimate of its real value. The sugar itself forms the staple article of the process. The molasses, which formerly was considered of so little value as either to be given to the pigs, or else used for making a soluble coloring matter, has latterly been examined more scientifically, and found to contain substances worthy of more attention. It is now mixed with water, slightly acidulated with sulphuric acid, and submitted to fermentation, and a large proportion of alcohol obtained by distillation in the usual way. The molasses usually contains about half its weight of sugar, and in that condition would yield about 30 per cent. of pure spirit. There then remain water, organic matter, and salts; the former is evaporated, and the latter are either ground up

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together and used as a manure, or else they may be separated, either by dissolving out the salts, or by incineration, which of course destroys the organic matter.

The quantity of saline matters varies according to the variety of root used; an average would, perhaps, give 8 to 12 per cent. of the weight of the molasses. They are found in the following proportions:—

*Sulphate of potassa, ...	7 to 11	per cent.
Carbonate of potassa, ...	17 to 20	"
Chloride potassium,.....	27 to 45	"
Chloride sodium,.....	25 to 34	"
Cyanide potassium, ...	traces.	

Analysis shows, that the percentage (·89) of mineral matters in the root is very small, and even of this certain portions remain in the pulp or cake, and in the clarifying pan; therefore the proportion of saline matter obtained from the molasses must be very small, in comparison with the bulk of roots used. It is, consequently, customary, after evaporating the residue of the distillation to dryness, to leave it in that condition, until a sufficient quantity has been obtained to economise the extraction and separation of the salts. At Waghausel, where about 30,000 tons are annually consumed, they obtain about 200 tons of salts in the foregoing proportions; at Valenciennes (Serret, Hamoir & Co.) the consumption and return are about double that amount.

SECTION V.—"*Comparison of profit per acre from production of sugar or corn at present prices.*"

We find some difficulty in determining the manner in which this section should be considered, as "the comparison of profit per acre from the production of sugar or corn" is in fact a comparison between the profits made by a manufacturer and those by a farmer.†

* Knapp, Chimie Technolog.

† We have some valuable information bearing upon this point, in the Report of the "Commission spéciale sur les Cultures de MM. Crespel à Arras," published in the "Annales de l'Agriculture" for 1850. Messrs. Crespel are not only manufacturers of beet-root sugar upon a large scale, but also cultivate extensive farms, for the purpose of growing their own supply, occupying in all 1519 hectares, (about 3750 acres), and manufacturing 2,500,000 kilogr's (about 2,500 tons) of sugar.

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However as the whole question relates more to *technical* than to *pure* agriculture, we will endeavor to meet what appears to us to be the intention of the proposers, by giving the respective cost and advantages of the two crops. The question of the cost of the manufacture of the sugar is so differently stated by different authorities, and so difficult to be arrived at from the manufacturers themselves, that, in order to save error, we only propose to give the various products and their market values; from which can be deducted the expenses of manufacture, according to the evidence selected.

So far our information has led us to believe that, for the production of a crop of beet for the *purposes of sugar-making*, it is desirable that the land be of good quality and in good condition; but that it is not desirable that any manure should be applied immediately preceding it. We know also that it is not generally considered good farming to take a wheat crop from fresh manured land, but rather to take a root or forage crop, and then the corn

It appears that they farm chiefly upon a 5 years' rotation, and that their land is thus divided, (1849)—

Hectares	310	always in mangold-wurzel, owing to peculiar conditions.
do	17	permanent grass.
do	368	in wheat.
do	101	in oats.
do	55	in rye.
do	484	in mangold-wurzel.
do	176	in leguminous plants, clover, sainfoin, &c.
do	8	in potatoes.
	1519	

The average produce of the mangold-wurzel is 35,000 kilos. per hectare = to about 14 tons the acre, and the average selling price is 18*s*, the 1000 kilos. = 15*s*. per ton.

The wheat (English variety) yields 45 hectolitres per hectare = to about 50 bush. the acre.

The common wheat (blé du pays) only yields 25 hectolitres per hectare = to nearly 28 bushels the acre.

The average of entire crop (1849) was 32 hectolitres, or about 35 bushels to the acre.

The straw averaged 6000 kilog. per hectare = 2½ tons to the acre.

Taking these averages, and assuming the value of the wheat to be 5*s*. per bushel, and the straw to be 20*s*. per ton, the money return for the two crops would be about the same, the advantage to the grower being that of having the tops of the mangold-wurzel left behind, either for feeding purposes or as a manure. The Report however states, that these returns, both in grain and in straw, are about one-third higher than the ordinary returns of the district.

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the year after. It will therefore save trouble, and probably much difference of opinion as to details, if we assume the soil for the two crops to be of equal value and in equal condition: their cultivation would then stand thus:

Mangold-wurzel.	£	s.	d.	*Wheat.*	£	s.	d.
Tillages,	1	19	0	Tillages,	0	14	6
Seed,	0	3	0	Seed,	0	10	0
Harvesting,	0	6	0	Harvesting,	0	6	0
	2	8	0		1	10	6

The average crop of sugarbeet on the Continent is, in the best districts, about 15 tons per acre.* We might in this country expect to grow rather more—say 20 tons to the acre, under favorable circumstances; and on land of that quality we might expect to see 5 quarters of wheat grown. Therefore the return of the crops would be, for—

Mangold-wurzel.	£	s.	d.	*Wheat.*	£	s.	d.
20 tons of roots at 15*s*.	15	0	0	5 qrs. of wheat at 48*s*.	12	0	0
3 tons of tops at 10*s*.	1	10	0	1½ ton of straw at 25*s*.	1	17	6
	16	10	0		13	17	6

If the expenses are deducted from each, it will leave a nett return of 14*l*. 2*s* for the mangold-wurzel, and 12*l*. 7*s*. for the wheat crop.

We ought, however, to bear in mind that the corn crop usually occupies the soil for an entire year, and that the root crop is sown in April or May, and is taken off the ground in October or November, at latest; thus offering to the farmer an opportunity of having some early keep, or even a crop of peas or early vegetables, if he live in the vicinity of a large city, and is disposed to follow the continental practice of transplanting his mangold-wurzel from his raising-beds to his fields. At the same time we must recollect that the extra expenses of tillage are not entirely lost; the long tap root of the mangold-wurzel seeks its food far

* M. Hamoir states, that they cultivate mangold-wurzel extensively, and that they average a crop of from 40,000 to 50,000 kilos. the hectare = to 16 to 20 tons the acre, according to the season: and that they can purchase their supply at from 14*s*. to 15*s*. per ton.

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below the line of ordinary cultivation; in harvesting, this is broken off and left in the soil, and the act of pulling up the crop occasions a disturbance of the soil, which is advantageous to the succeeding crop. In topping, cleaning and trimming the roots, too, a large quantity of organic matter is left on the field, which must in its decay assist in fertilising the soil.

If we look at the relative amount of mineral matter removed by the two crops, we shall find that, although the one removes a bulk of 23 tons, and the other only a little more than 2½ tons, their mineral constituents differ but slightly in weight—the one being about 398 lbs. in the roots, and 105 lbs. in the leaves, per acre, and the other about 365 lbs. per acre. If the mangold-wurzel is used for the purpose of sugar-making by the grower of it, then the *whole* of the mineral or inorganic matters would remain on the farm, as the substance abstracted (the sugar) is composed entirely of organic elements, which are all derived from the atmosphere.

The following analysis of the mangold-wurzel will perhaps be of service in estimating the real chemical value of the crop:—

	Tops.	Root.
Silica,	1.99	2.57
Phosphoric acid,	5.15	3.08
Sulphuric acid,	5.8	3.37
Carbonic acid,	6.49	18.32
Lime,	8.65	1.95
Magnesia,	8.66	2.11
Peroxide of iron,	.96	.6
Potass,	21.26	24.79
Soda,	7.01	13.75
Sodium chloride,	33.96	29.41
Per centage of ash,	1.7	.886*

The leaves of the plant also appear to possess a far higher value, both as a *feeding* and as a *manuring* substance, than we are accustomed to assign to them. Boussingault (Annales de Chimie) gives us an organic analysis of the roots and the leaves of the plant; a comparison between their respective compositions will

*Way, in the Royal Agricultural Society's Journal.

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be very much in favor of the leaves for the purposes just mentioned. The substances were dried necessarily, previous to analysis. Their proportions of water were about the same, and their elementary composition was as follows:—

	Root.	Root.	Leaves.
Carbon,.....	42.75	42.93	38.1
Hydrogen, ...	5.77	5.94	5.1
Oxygen,.....	43.58	43.23	30.8
Nitrogen,.....	1.66	1.66	4.5
Ash, ...	6.24	6.24	21.5

thus showing that, in a chemical point of view, the leaves *were three times as valuable* as the *same weight of roots* would be.

Thus much for the agricultural part of the question; the manufacturing we will leave for the reasons already given. We may, however, assume that, under fair management, the root will yield 6 per cent of sugar;* the crop of twenty tons would then be disposed of as follows:—1 1-5th tons of sugar at, say from 26*l.* to 32*l.* per ton; 3 tons of cake (the pressed pulp) at 2*l.* per ton; 8 to 15 cwt. of residue, containing alkaline salts, organic matter, and sugar, which latter is convertible into alcohol, to the extent of 1-3rd of its own weight.†

In taking a rèsumè of the foregoing, it would appear that—

1stly. The cultivation of the beet for sugar making leaves the whole of the mineral matter free to be returned to the soil, either in the shape of a direct manure, or in the shape of a nutritious feeding substance for cattle.

2ndly. The plant obtaining its food from the atmosphere, and by means of its long tap-root from the soil at a depth below ordinary cultivation, would not injure the succeeding crop, but would have a tendency to enrich the surface-soil by elaborating mineral matter from below and bringing it up to be applied on the surface.

3rdly. It offers opportunities to the grower to make other use of his land for, say 6 months out of the 12, which, in many

* Messrs. Serret, Hamoir & Co. consider that 6 per cent. of fine sugar is a satisfactory result; the last year being a favorable one, they obtained 7 per cent.

† Sullivan gives sugar at 28*l.*, cake at 2*l.*, molasses at 2*l.*, per ton.

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cases would be productive of great pecuniary benefit to him; it also enables him to select his own time for harvest, without any sacrifice of the valuable principle of his crop.

In conclusion, we must acknowledge that the departments of production and consumption appear to us to require distinct consideration, and could not be carried on beneficially by the same individual, unless under peculiar circumstances.

The producer, generally, has neither the capital nor the knowledge required in such a manufacture; neither could the manufacturer, on the other hand, supply himself entirely, even were he to invest a portion of his capital away from his own special calling. He, no doubt, could and would farm well; but in order to keep his machinery in motion, he would require the produce of an entire district. Apart from all manufacturing calculations, it would appear to us that the establishment of such a manufacture would be productive of benefit to the district, inasmuch as a ready market would be obtained for a paying crop—an improved system of agriculture would be generated in order to meet the demands of the consumers—and the successful application of science in the factory would probably lead to its more general introduction in the field.

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SALT.

We give the following interesting report of Prof. Cook, in continuation of the examinations relative to a great number of varieties of salt. It will be gratifying to our farmers and others to be satisfied, as this report will satisfy them of the purity of our salt.

PROF. GEORGE H. COOK'S REPORT.

To Hervey Rhoades Esq.,

Superintendent of Onondaga Salt Springs, N. Y.:

Sir—I respectfully submit the following report, as the results of my inquiries and investigations upon the manufacture of common salt, and the means for improvement therein.

In the manufacture of salt by solar evaporation, the average annual yield, for each *cover*, is not far from 50 bushels. By a comparison of the amount of evaporation necessary to produce this amount of salt, with the annual evaporation of fresh water, I have become satisfied that the annual yield of solar salt is not near as great as it should be for the evaporating surface in use. My conclusion is deduced from the following facts:

The annual evaporation at Syracuse was given in the Superintendent's report of last year, under the "Scientific Observations" made by Lyman Conkey, Esq., as follows:

	Inches.
January,	0.665
February,	1 489
March,	2.239
April,	3.421

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	Inches.
May,	7.309
June,	7.600
July,	9.079
August,	6.854
September,	5.334
October,	3.022
November,	1.325
December,	1.863
Total annual evaporation,	50.200
Evaporation from April to Sept., incl.,	39.597

This is the only series of experiments which has been made on the Onondaga reservation, to my knowledge. It agrees remarkably well, however, with observations made in other places. The evaporation at Ogdensburgh for 1838, as given by Mr. Coffin, in the Regent's report, 1839, was 49.362 inches. In Thomson's Meteorology, p. 104, it is said that the annual evaporation at Manchester, Eng., is 25.16 inches; at Liverpool, Eng., 36.73 inches; at Boston, Mass., the average for 7 years was 56 inches. Dr. Brownrigg says, "In some of the warmest and least rainy parts of England, a pond, at a moderate computation, usually loses seventeen inches depth of water in exhalations, during the four hottest months, more than it receives from the heavens during the same time." (*Art of Making Common Salt, p.* 190.) By several test experiments made for a few weeks at a time, I have myself become satisfied of the reliability of Mr. Conkey's results.

Most of the brine now used will yield 17 per cent. of its weight of salt, and the weakest will yield 16 per cent. Taking the latter for our calculations, we find that, to produce 50 bushels of salt, weighing 56 pounds each, 16,470 pounds of water must be evaporated. The covers are usually 16 feet wide, and from 16 to 19 feet long. Their average area may be taken, at 280 superficial feet. Now, allowing a cubic foot of water to weigh 62½ pounds, we have evaporated from each surface of 280 square feet, 263½ cubic feet, which would fill a *room* of that area only 11 3-10 inch.

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deep, The annual evaporation is more than four times that depth. But as the solar salt is nearly all made during the months of April, May, June, July, August and September, the calculations should be confined to the same time. The evaporation for these months is 39.6 inches, or about 3½ times as much as would seem to be made available in salt making.

To ascertain whether any allowance should be made for the greater rapidity of evaporation of fresh water, the following experiments were made:

In the first series, the liquids were exposed in tin vessels of the same size and shape, to the air of a room heated to about 70° Fah. The relative places of the vessels were changed at the different trials, so as to avoid any error from currents of air. The numbers indicate the losses, in equal times, in grains.

Vessels.	Liquids.	1st trial.	Mean.	2nd trial.	Mean.	3rd trial.	Mean.
1.	Fresh water,	140	140	164	164	474	474
2.	Brines from well,	116	115	150	158	407	422
3.	"	115	"	167	"	438	"
4.	Saturated brines,	101	109	126	135	363	368
5.	more or less	90	"	128	"	345	"
6.	impure, ...	88	"	145	"	363	"
7.	"	134	"	150	"	419	"
8.	"	113	"	140	"	380	"
9.	"	118	"	159	"	417	"
10.	"	125	"	121	"	352	"
11.	"	103	"	110	"	305	"
12.	Strong bitter-water,	63	63	73	184	184	

In the following series the experiments were made by exposing vessels, of the same shape and size, and filled to the same depth, under the receiver of an air pump. In this way, all currents of air were avoided, and the vapor which rose, could be absorbed by sulphuric acid, and the experiments much hastened.

		1st trial, Temp. 50°.	2nd trial, Temp. 50°.	3d trial, Temp. 50°.	4th trial, Temp. 100°.
1.	Fresh water, ...	19	12	32	369
2.	Brine from well,.	16			
3.	Saturated brine, .	..	7	22	285

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The ratio of evaporation, of the fresh water to the saturated brine, in the three experiments in the open air, is as 1 to 0.787, and in those under the receiver of the air-pump, as 1 to 0.760, an agreement sufficiently close to give confidence in the results. This ratio may be taken in round numbers as 4 to 3. Making this allowance on the 39.6 inches of fresh water evaporated during the months from April to September, inclusive, we have 29.7 inches as the amount of water which should be evaporated from the brine during that time. This is without making any allowance for the more rapid evaporation which goes on before the brine becomes saturated. The calculation, then, shows that the whole amount of evaporation is to that used in salt making, as 2.6 to 1, or that where 50 bushels are now made, there should be 130 bushels. This is an enormous loss when the whole amount of solar salt is taken into the account.

This loss cannot be attributed to catching rain water, for the average amount of rain during those months, for several years past, is only 19-21 inches, which is about the amount of loss, and it is the universal practice to run on the covers before rains. Most of the losses must be owing to leakages, which originate partly from bad carpentry, and partly from the penetrating property imparted to the brine by the presence of chloride of calcium. This latter property is very remarkable. Brine containing chloride of calcium will pass directly through wood, or even through common stone-ware. In the wooden *rooms* where strong pickle has been kept for many years, there is no considerable accumulation of chloride of calcium; it runs directly through the wood and escapes, and though it carries with it a good deal of salt, the tendency is to purify the pickle which is left.

The correction of this loss must rest with the manufacturers. Something may be done by more care in making the joints, and something by caulking or by using water-lime in the rooms. But I think a more effectual remedy would be found by making the rooms of earth and puddling them with clay; and perhaps making the bottoms of water-lime. The covers could be used then the same as now. This is the method generally pursued in all warm climates, with the exception that there no covers are used;

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their salt ponds are all open, and receive the whole of the rain which falls during the season. I have no precise data from which to show the advantages of this method, except from Marseilles, in France. There, salt is made from the water of the Mediterranean sea, which contains about five per cent. of salt, when drawn from the settling ponds into the shallow ponds where the salt is made. About 12 pounds of salt are made on each superficial foot of evaporating surface, to produce which requires the evaporation of about 36 inches of water. Their season lasts from April to September inclusive; the mean temperature for that time, for 1847 and 1848, was 66.6° Fah., and the average amount of rain for the same time 9.22 inches.

The mean temperature at Albany, which is nearly the same with Syracuse, for those months for several years past, has been 62.2° Fah. Now, adding the 9.22 inches of rain to the 36 inches of sea water, and we have the whole evaporation for those months 45.22 inches, or a depth considerably greater than is claimed for Onondaga.

About two years since I made an experiment upon the boiling away of fresh water and brine, at Mr. Spencer's block in Syracuse. Two of his salt kettles, the 10th and 11th, in the same arch, were used for the purpose. The kettles were of the same size, being hemispheres of four feet in diameter; they were first filled, the 10th with fresh water, and the 11th with brine, to the depth of 21½ inches. They were then allowed to boil briskly for four hours, at the end of which time the water in No. 10 was found to be 12⅞ inches deep, and the brine in No. 11, 13⅜ inches deep. The arrangement was then reversed, No. 10 being filled with brine, and No. 11 with fresh water, to the same depth as before. At the end of four and twenty minutes the brine in No. 10 was found to be 14¼ inches deep, and the water in No. 11, 13¼ inches deep.

In order to give the matter a fairer test, I recently had two equal, semi-cylindric vessels of tin made, each having an evaporating surface of about 6 square inches. These were filled equally, one with saturated brine, and the other with fresh water. They

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were then heated separately by spirit lamps; care being taken to make the lamps, tubes, wicks, alcohol and trimmings as near alike as possible. Four trials, two of 2 hours and two of an hour and a half each, were then made. The vessels were interchanged, and also the lamps, in the different trials. The following are weights evaporated in the different trials; the weights are 12ths of ounces, the smallest used:

	1st.	2d.	3d.	4th.	Sums.
Water,.....	66	89	78	81	314
Saturated brine.....	59	102	75	84	310

These, as well as the preceding experiment, show, that there is no material difference in the evaporation of fresh water and brine when both boil, which is entirely consistent with theory.

In two trials with the above described tin vessels, containing brine and water as before, the vessels were heated by placing them in boiling water. The trials were continued for two and three hours, and the ratio of the water evaporated to the brine, was as 1 to 0.6. At this temperature, however, it is difficult to make accurate experiments, on account of the brine becoming covered with a strong skim or crust of salt, which retards evaporation, and consequently I place but little reliance on these last.

In the course of my investigations on the manufacture of salt, a large number of specimens from various parts of the world have been collected. Many of these have been analyzed during the past season, and the specimens deposited in the State Cabinet of Natural History at Albany.

The numbers which precede the names or titles of the specimens will enable any one to refer to them in the Cabinet.

The specimens of salt from 1 to 11 inclusive, were made from Onondaga brines, and are average ones of that salt. Being made by different processes of manufacture, they vary considerably in the size and form of their crystals or grains, and in their specific gravities; but in chemical composition they are very much alike.

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Analyses.

		Chloride of Sodium, (salt.)	Sulphate of Lime, (plaster.)	Chloride of Calcium, (bittern.)	Chloride of Magnesium (bittern.)	Water.
1. Solar salt,	1851,	96.70	1.43	0.05	0.03	1.79
2. do	1853,	97.91	0.67	0.06	0.07	1.29
3. Boiled salt, (front kettle,)	1852,	96.19	1.81	0.17	0.09	1.74
4. do do	1853,	97.28	1.46	0.09	0.07	1.10
5. do (middle kettle,)	1852,	96.82	1.41	0.15	0.08	1.54
6. do do	1853,	97.41	1.26	0.15	0.18	1.00
7. do (back kettle,)	1852,	96.81	1.13	0.18	0.08	1.80
8. do do	1853,	96.41	1.51	0.21	0.27	1.60
9. Salt made by S. B. Howd's process,		97.95	0.04	0.04	0.03	1.94
10. Salt made by an iron pan by J. P. Haskins,		97.88	0.17	0.19	0.16	1.60
11. Salt condemned by the inspectors,		98.11	0.67	0.02	0.10	1.10

The specimens from 12 to 14 are from near Pittsburgh, Penn., and those from 15 to 20 are from the Kanawha salines. They are nearly alike in the character of their impurities. They are made by artificial heat and from weak brines.

Analyses.

	Chloride of Sodium.	Chloride of Calcium.	Chloride of Magnesium.	Water.
12. Salt fm saw mill run, nr Pittsb'h,	89.77	1.78	0.55	7.90
13. do Orr's works, do	96.70	0.53	0.07	2.70
14. do Paterson's do do	95.93	0.74	0.13	3.20
15. Salt No. 1, from Kanawha,	91.31	1.26	0.43	7.00
16. do 2, do	88.39	1.48	0.43	9.70
17. do 3, do	86.65	1.48	0.47	11.40
18. do 4, do	87.00	2.14	0.56	10.30
19. do 5, do	86.52	2.58	0.72	10.10
20. do 6, do	82.75	3.68	1.67	11.90

The specimens from 21 to 25, inclusive, are from Saltville, near Abingdon, Washington Co., Va. These are remarkably pure specimens of salt. They are all made by artificial heat.

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Analyses.

	Chloride of Sodium.	Chloride of Calcium.	Chloride of Magnesium.	Water.
21. Salt No. 2, Saltville, ...	98.45	0.95	0.20	0.40
22. do 4, do	99.01	0.20	0.09	0.70
23. do 6, do	99.18	0.27	0.05	0.50
24. do 7, do	99.11	0.68	0.11	0.10
25. do 8, do	98.61	1.02	0.27	0.10

The specimens from 26-35 were made from the brine at Northwich, Cheshire, England. 36 and 39 are made from British rock salt dissolved in sea-water; 37 and 38 are from the brine at Winsford, Cheshire, England; 40 is from the brine at Droitwich, Worcestershire, England; 42 and 46 are from British rock salt dissolved in fresh water. They are all made by artificial heat.

Analyses.

	Chloride of Sodium.	Sulphate of Lime.	Chloride of Calcium.	Chloride of Magnesium.	Water.
26. Stoved salt, ...	98.53	1.26	trace.	0.01	0.20
27. Butter, ...	97.22	1.75	trace.	0.01	1.02
28. Marine butter, ...	97.89	1.46	trace.	0.01	0.64
29. Fine common, ...	98.28	0.76	0.01	0.01	0.94
30. Common, ...	96.36	1.17	0.01	0.02	2.44
31. Rough common, ..	96.53	1.61	0.01	0.02	1.84
32. Extra rough common, ...	95.46	1.46	0.01	0.03	3.04
33. British bay, ...	96.77	0.76	trace.	0.03	2.44
34. Fishery, ...	96.98	0.20	0.01	0.03	2.78
35 Stoved (Ashton's),	97.59	1.67	0.01	0.03	0.70
36. Stoved, (Garston),	98.21	1.50	trace.	0.09	0.20
37. Butter, (Junips),	97.59	1.76	trace.	0.15	0.50
38. Common, do	97.90	1.26	trace.	0.04	0.80
39. Fishers, (Garston),	93.09	0.85	trace.	0.56	5.50
40. Stoved, (Noak's),	96.93	3.05	0.00	0.02	0.00
41. Rock salt, (Crystal), ...	100.00	0.00	0.00	0.00	0.00
42. Rock salt, (common), ...	99.52	0.46	0.00	0.02	0.00

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43. Holland cheese s't,	97.11	0.56	trace.	0.13	2.20
44. do medium do	97.06	0.70	trace.	0.14	2.10
45. do butter do	98.46	0.88	trace.	0.06	0.60

46. Salt from Belgium.

The specimens from 47-53 are from Dieuze, in the department of La Meurthe, France. The brine from the spring is weak, but is brought to saturation by the addition of rock salt. 47-51 are made by artificial heat.

Analyses.

	Chloride of Sodium.	Sulphate of Lime.	Sulphate of Magnesia.	Water.
47. Coarse salt, ...	95.85	1.09	0.96	2.10
48. Medium salt,.....	97.92	0.75	0.33	1.00
49. Fine salt,.....	97.59	1.02	0.89	0.50
50. Very fine salt, ...	97.64	1.09	0.87	0.40
51. Grey salt,.....	97.67	1.29	0.14	0.90
52. Ground rock salt,....	97.45	2.35	0.00	0.20
53. Rock salt,.....	97.70	2.05	0.15	0.10

The specimens from 54-72 are made from sea water or from salt ponds, by solar evaporation; 73 and 74 are from Salt Lake, Utah; 75 is from a new rock-salt mine, discovered at Carrickfergus, Ireland, last year.

Analyses.

	Chloride of Sodium.	Sulphate of Lime.	Chloride of Magnesia.	Sulphate of Magnesia and Soda.	Water.
54. Turks Island Salt,.....	96.76	1.56	0.14	0.64	0.90
55. St. Martins, ...	97.21	0.54	0.26	0.24	1.75
56. Curacoa,.....	99.85	0.12	0.03	0.00	0.00
57. Bonair,.....	97.31	0.60	0.21	0.84	1.04
58. Rum Key, ...	94.75	0.78	0.57	0.66	3.24
59. St. Kitts, ...	99.77	0.08	0.01	0.00	0.14
60. Fortune Islands,.....	97.45	1.43	0.01	0.27	0.84
61. Anguilla,.....	99.18	0.08	0.11	0.04	0.59
62. Cadiz,.....	95.76	0.75	0.57	0.48	2.44
63. Lisbon,.....	94 17	0.49	1.11	1.39	2.84

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64. Hyeres Island, ...	93.13	0.61	1.04	0.68	4.54
65. Ivica, ...	93.06	1.09	0.66	2.49	2.70
66. Trapani, ...	96.78	0.41	0.49	0.68	1.64
67. Martha's Vineyard, ...	94.91	1.42	0.24	0.19	3.24
68. Isle of Rhe, ...	.....	....	....	....	....
69. Bouin, ...	.....	....	....	....	....
70. Noirmoutiers, ...	.....	....	....	....	....
71. Britany, ...	95.04	1.76	0.60	0.00	2.60
72. Texas, ...	99.46	0.10	0.00	0.30	0.14
73. Salt Lake, (near Pilot Peak), ...	97.61	1.03	0.00	0.08	1.28
74.*Salt Lake, (Black Rock),	. ...	....	....	....	0.68
75. Irish rocksalt, ...	96 28	3.50	0.00	0.08	0.14

The specimens 76 and 77 (blocking) consist of sulphate of lime and common salt; the salt varying in amount from 50 to 95 and even 98 per cent of the whole.

78, 83 and 84 (pannings and skimmings), are sulphate of lime, with a very small portion of salt, and from 5 to 20 per cent of water.

79, 80 and 82, consist, essentially, of oxide of iron, with a very little carbonic acid. Salt is mixed with the oxide of iron in all of them, and in 79 there is a little sulphate of lime.

*This is all sulphate of soda.

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The specimens from 85–97, inclusive, are brines and bitter waters, or bitterns.

Analyses.

		Specific gravity.	Per cent of dry matter.	Chloride of sodium.	Sulphate of lime.	Sulphate of magnesia.	Chloride of calcium.	Chloride of magnes'm.	Oxide of Iron
85.	Onondaga brine, Syracuse,.....	1.142	18.5	95.866	2.54	0.00	0.90	0.69	0.004
86.	do Salina,.....	1.122	16.1	95.312	3.03	0.00	0.93	0.72	0.008
87.	do Liverpool,....	1,122	16.1	95.328	2 30	0.00	1.52	0.85	0.002
88.	Cheshire brine, Brit. Salt Co's.,.	1.200	26.2	98.070	1.57	0.00	0.13	0.23	
89.	do Ashtons, ...	1.190	25.1	97.926	1.66	0.00	0.15	0.27	
90.	Brine from the spring at Dieuze	1.122	15.2	94.870	1.83	3.30	0.00	0.00	
*91.	do well at Saw-mill run, ...	1.019	2.8	81.270	0.00	0.00	13.93	4.80	
*92.	do Kanawha,.....	1.073	9.2	79.450	0.00	0.00	16.48	4.07	
*93.	do Saltville,.	1.198	26.4	98.390	1.22	0.39	0.00	0.00	
94.	do Salt lake, Texas,	1.187	24.9	97.080	0.82	2.10	0.00	0.00	
95.	Bittern, Onondaga,.....	1.242	33.3	49.190	0.08	0.00	26.31	24.42	
96.	do Kanawha,.....	1.312	37.3	00.160	0.00	0.00	77.86	21.98	
97.	do (leach brine) Cheshire,	1.206	26.5	97.100	2.04	0.00	0.37	0.49	

Besides the constituents mentioned above, carbonic acid is found in several of these brines. In the Onondaga brines I have not found more than one cubic inch to a gallon. The Kanawha brine contains a considerable quantity of bromine; both iodine and bromine are found in the Onondaga and Cheshire brines. Potash has not been found in those from Onondaga or from Kanawha.

The specimens from 98–105, with those numbered 41 and 42, represent the different strata passed through in sinking a shaft for a rock-salt mine in Cheshire, England. The following is the account of these, in the order in which they are met, as given me by an experienced miner:

2 feet of soil.
3 do fox-bench or hard-pan.
36 do marl, indurated clay, or hard-pan.
7 do open gravel.
90 do *metal*, marly earth which seems of crystalized gypsum, the latter most abundant near the bottom.
75 do rock salt.

* These brines all contain oxide of iron, but its quantity has not been estimated.

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30 feet of stone, red and mottled, containing veins of red rock salt.
75 do rock salt.
15 do rock salt; this layer contains less earthy matter than those above or below it, and is the only one worked.
180 do rock salt; a shaft has been sunk to this depth, without passing through the stratum.

168 feet of rock and earth.
345 do rock salt.

513 feet, total.

The specimens from 109 to 115 were presented by E. Meriam, Esq., of Brooklyn. They were accompanied by several others, which have already been mentioned, and by the following descriptive notes. The numbers correspond with those of the preceding list:

93. "Salt water from a shaft sunk in the Holston Salt Mines, at Saltville, Washington county, Va. This bottle of brine was received, in the spring of 1846, from Thomas L. Preston, Esq."

21. "Salt from the Holston Salt Wells, Saltville. A kettle was filled with the brine, and a broad pan placed at the bottom, and carefully withdrawn previous to the commencement of ebullition."

83. "The matter caught in the pan previous to the boiling of the brine" 21.

22. "Salt from Saltville. The brine from which this specimen was made was skimmed previous to boiling."

84. "Skimmings of the kettle from which '22' was made."

23. "Salt from Saltville. Brine as it came from the well settled with alum—say 2 lbs. to 6000 gallons of brine."

24. "Salt from Saltville. Brine as it came from the well, settled with lime, say 4 quarts to 6000 gallons."

25. "Salt from Saltville. Brine as it came from the well."

109. "Salt water from a well sunk at Montezuma, N. Y., in 1842, to the depth of 605 feet. This water is fully saturated.

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One pint of it yields 2,112 grains of chlorides of sodium, calcium, and magnesium. (See Municipal Gazette, Vol. 1, p. 120.)"

110. "Salt water from a well 400 feet deep, sunk at Lockpit, Wayne county, N. Y., about five miles east of Clyde, and near the Canandaigua outlet. (See Municipal Gazette, Vol. 1, p. 140.)"

111. "Salt water from a well sunk in 1846, near Little Sodus Bay, N. Y. (See Municipal Gazette, Vol. 1, p. 587.)"

112. "Salt taken in 1844, from a salt spring in the wilderness, in Perry township, near the river Trent, Upper Canada. This spring is about 30 miles north of Lake Ontario."

113. "Water taken from the Dead sea, by Fisher Howe, Esq., of Brooklyn, L I., Jan. 19, 1850. This water is a little discolored by the bottle in which it was brought."

114. "Water from the well of Findley, Mitchell & Co., Saltville, Washington county, Virginia, Jan 31, 1844."

115. "Salt from the Great Salt Lake, Utah Territory. Obtained by Capt. Stansbury, in 1849."

For additional particulars relating to the brines and salt mentioned in the foregoing list, reference may be made to the annual reports of the Superintendents of Salt Springs for several years past; also to Dr. Lewis C. Beck's report on Mineralogy, being one of the volumes of the Natural History of New-York. The Municipal Gazette referred to in the notes of Mr. Meriam, and published by him, contains a large amount of matter relating to salt and its manufacture, both in this and other countries, which is not otherwise accessible.

An examination of the preceding analyses cannot fail to lead to the conclusion that the excellence of common salt, or its adaptation to particular purposes in the popular estimation, has no connection with its freeness from impurities; for some of the specimens in the above table, which are very impure, have a high reputation for their preservative properties, while, on the contrary, there are others which are almost absolutely pure, and yet are not specially sought after.

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This conclusion has been stated in all my preceding reports, and the analyses entirely sustain it. This was the conclusion to which Dr. William Henry, of Manchester, also came, after several months of laborious examination of the different kinds of salt known in commerce. His results are to be found in the Repertory of Arts, Second Series, Vol. 17; also in the Philosophical Transactions of the Royal Society of London. This article is probably the best that has ever yet been published on the subject. He says: "What then, it may be inquired, is the cause of those differences, which are allowed on all hands to exist among the several species of muriate of soda, so far as respects their fitness for economical purposes? If I were to hazard an opinion on a subject about which there must still be some uncertainty, it would be that the differences of *chemical composition*, discovered by the preceding train of experiments in several varieties of culinary salt, are scarcely sufficient to account for those properties which are imputed to them on the ground of experience. The *stoved* and *fishery* salt, for example, though differing in a very trivial degree, as to the kind or proportion of their ingredients, are adapted to widely different uses. Thus the large grained salt is peculiarly fitted for the packing of fish and other provisions, a purpose to which the small grained salts are much less suitable. Their different powers, then, of preserving food must depend on some mechanical property; and the only obvious one is the magnitude of the crystals, and their degree of compactness and hardness. Quickness of solution, it is well known, is pretty nearly proportional, all other circumstances being equal, to the quantity of surface exposed. And since the surfaces of cubes are as the squares of their sides, it should follow that a salt whose crystals are of a given magnitude will dissolve four times more slowly than one whose cubes have only half the size.

"That kind of salt, then, which possesses most eminently the combined properties of hardness, compactness, and perfection of crystals, will be best adapted to the purpose of packing fish and other provisions, because it will remain permanently between the different layers, or will be very gradually dissolved by the fluids that exude from the provisions; thus furnishing a slow but constant supply of saturated brine. On the other hand, for the pur-

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pose of preparing the pickle, or of *striking* the meat, which is done by immersion in a saturated solution of salt, the smaller grained varieties answer equally well; or, on account of their greater solubility, even better."

To the above from Dr. Henry, may be added the following description of good salt, as given by Dr. Brownrigg, whose work on the subject is considered authority. The best salt "is usually concreted into large grains or crystals, which are firm and hard, and in respect to those of other kinds of common salt, the most solid and ponderous; it is not disposed to grow soft or moist in a moderately dry air, to which it must have been exposed a considerable time; its color is white and somewhat diaphanous; it hath no smell, its taste is truly muriatic, and more sharp and pungent than that of other kinds of common salt; being dissolved in pure water, it casts up no scum and deposits no sediment, &c."

On comparing Onondaga salt with the above description, it will be found to be susceptible of improvement, especially the boiled salt, in the firmness of grain and in the disposition not to absorb moisture from a moderately dry atmosphere. This improvement can be effected by discontinuing the use of lime in settling brine, and using alum or clay instead. The color of the Onondaga salt is sufficiently white, but it is not diaphanous, or transparent. I do not know how this can be improved. It has no smell, a character which distinguishes it from most of the salt made from ocean water; the latter having almost invariably, a disagreeable, putrid odor. Its taste is unobjectionable. In regard to the last point, there is room for much improvement, in the boiled salt. When dissolved it usually has a milky appearance, and a frothy scum rises to the surface, and, if allowed to stand till it becomes clear, a considerable deposit of sediment is seen. This deposit is only sulphate of lime, (plaster,) which is quite harmless in its nature; but it looks badly, and, by those not acquainted with it, is generally supposed to be lime. This evil arises from bad panning, and is in some measure incident to the method pursued here, but may be much lessened by care. The common processes of manufacture have been so fully dwelt upon in former reports, that any more extended notice in this place seems unnecessary.

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The iron pan constructed by J. P. Harkins, Esq., of Salina, continues to work profitably, and turns out salt of a coarse, hard and firm grain. It is to be hoped that the plan will be more extensively adopted.

The works of S. B. Howd, Esq., which were described in the Superintendent's report for 1850, are still in operation, and it is said have yielded considerably more than the average number of bushels of salt for every cord of wood burned. Mr. Howd is now making the experiment of using anthracite coal for fuel, and apparently with good results.

His works are very ingenious, and are worthy of study. In one very important respect his apparatus is superior to others, and that is, that he can for weeks together boil saturated brine, containing a great deal of sulphate of lime, without incrusting the inner surface of the boiler. By the saving of fuel, consequent upon having a boiler always free from blocking, and by the use of the steam generated in boiling the brine he expects to make his works profitable. The salt made is of an excellent quality.

L. T. Hawley, Esq., has used coal in making salt in a common block, during the past season. His block was one of forty-eight kettles; fires were made at both ends of the arches, so that each fire heated twelve kettles. The experiment was successful. The average yield for the season was 50 bushels of salt for each ton of coal burned. The coal burned was of the pea-size, and worth about $3.50 a ton. This was decidedly more economical than to burn wood at the high prices it has commanded during the season. It shows, too, that even, with the little experience now had in the arrangement and management of coal fires, they can successfully compete with those of wood, and that the change from the use of one kind of fuel to the other, will not be attended with any great difficulty or expense.

In my report for last year I gave some account of the method of surface evaporation, as pursued at Hurlet alum works, Scotland. Since that time, through the favor of the Hon. D. O Kellogg, U. S. Consul at Glasgow, I have been furnished with the

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following report on the process. It was made by a competent and practical chemist, employed by Mr. Kellogg, for me:

Report on evaporation by surface-heat, as carried on at certain chemical works in Glasgow and its vicinity.

Having undertaken, at the request of D. O. Kellogg, Esq., United States Consul, Glasgow, an inquiry into the evaporation of liquors by surface-heat, as carried on at several chemical works in this city and its vicinity, I now submit the result of my investigations upon the subject.

I have particularly directed my attention to this method of evaporation as applied at the Hurlet and Campsie alum works, and also at several of the large soda works in Glasgow, with the operations and processes, at all of which I have for many years been intimately conversant.

In reporting upon the precise points of inquiry submitted to me by Mr. Kellogg, I am induced, after careful consideration, to restrict myself to the information obtained at the Hurlet alum works, where the apparatus is well constructed, and the operations systematically and successfully carried out, and where likewise careful records have been kept of the consumption of fuel, as well as the amount of evaporation performed per day.

At these works there are four evaporating tanks, technically called "boilers," which are employed exclusively for concentrating the crude sulphate of alumina liquors, obtained by steeping the calcined alum-shale in shallow tanks with water. They are constructed entirely of bricks, and are arranged in pairs, end to end, in a low-roofed building. Each evaporating boiler is provided with a separate furnace, and all four lead into a common stalk which is about 120 feet in height. The flame and products of combustion arising from the coal in the furnaces are allowed to sweep over the surface of the liquors in the boilers, and by this means evaporation rapidly takes place, and the liquors are soon brought to the required density (30° of Twaddle, or sp. gr. 1.150) for being run off into the stone coolers, where they are mixed with sulphate of ammonia or with muriate of potash, according as ammonia, alum, or potash-alum is to be produced.

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The general form and construction of these evaporating boilers and furnaces are shown in the accompanying drawing, No. 1. They have vertical sides and ends, but at the bottom they are inverted, arch-shaped, and they are arched over at top. Each boiler is furnished with two man holes.

I shall now proceed to answer seriatim the precise inquiries that have been submitted to me, viz:

1. "The dimensions of the receivers." (Boilers.)

Each is 50 feet in length, 6½ in breadth, and 5 in depth from spring of arch.

2nd. "The materials used in constructing them."

The boilers are built of common bricks to the spring of the arched cover, and are most carefully puddled, or cemented at the back with fire clay, or with a mortar composed of lime and exhausted shale* to the extent of ten or twelve inches in thickness. This puddling is necessary, in consequence of the powerfully acid and corrosive nature of the crude liquors: indeed, more depends on this puddling than upon the bricks.

3d. "The materials used in covering them."

They are arched over with fire-bricks, which are well puddled on the outside.

4th. "The height of the cover above the surface of the liquor."

Eighteen inches from the spring of the arch.

5th. "The size of the grate (furnace) used."

6 feet from back to front.
2 do in height.
5 do in breadth.

6th. "The cost and durability of such structures."

The cost of each furnace is estimated at £60, sterling.

* Common puddle clay is preferred by some parties for alum liquor boilers.

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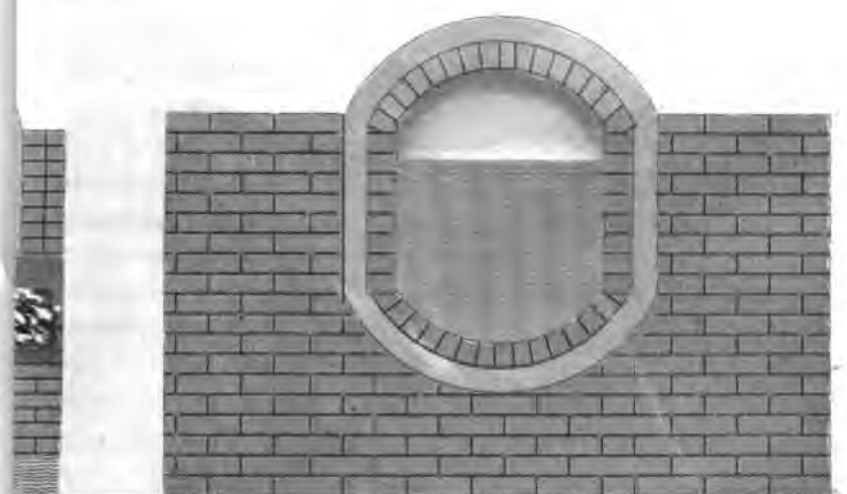
Nº 2

SECTION AT AB.



Engd by J. E. Gavit, Albany.

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I could obtain no data by which I was able to ascertain satisfactorily the durability of these evaporating boilers. The wear and tear appears to be very considerable, and the patching and repairing very frequent, indeed almost incessant, arising obviously from the corrosive nature of the liquors, and their great tendency to throw down a thick sedimentary sludge, during the evaporation.

7th. "Quantity of coal burned each day or week."

3 tons 8 cwt. of coal for 500 cubic feet of liquor, which is the quantity evaporated in twelve hours, in one boiler.

8th. "The quality and average cost of the coal consumed."

Caking coal of a soft bituminous quality, similar to the Newcastle coal. Cost 6s per ton.

9th. "The amount evaporated each day or week."

Answered in No. 7.

10 "The extent of the use of this kind of evaporating structures."

They are employed principally for the evaporation of alum liquors, and crude soda liquors.

In conclusion, I may remark that I have no experience as regards the application of this process, to the evaporation of brines in the manufacture of salt, and accordingly I am not prepared to offer a decided opinion as to its availability for such a purpose. I am led, however, to think, that by appropriate modifications, it might be advantageously employed. Indeed, as far as I can at present see, there are only two objections that seem to militate against its being applied, viz: 1st. The difficulty of preventing the brine and the salt from being injured by the dirt and smoke arising from the fuel in the furnace, and secondly, by the difficulty of "fishing" out the salt from a vessel that requires to be kept closed during the evaporation of the brine. These difficulties, however, are, in my opinion, by no means insuperable; but might, I think, be easily overcome by some slight modifications of the process which one or two trials would suggest, and also by the

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application of some simple mechanical contrivance for removing the salt as it falls.

As regards the practical use of surface evaporation on the large scale, for evaporating alum and other chemical liquors, I have no hesitation in stating, as the result of many years' experience, that the method is unquestionably expeditious, economical, and in every respect efficient.

FREDERICK PENNY,

Professor of Chemistry, Andersonian University, Glasgow.

DAY O. KELLOGG, Esq., *U. S. Consul, Glasgow.*

28 *March*, 1853.

Note.—At some chemical works where surface evaporation is applied, the evaporating boilers instead of being raised upon brickwork, as shown in figure No. I, are sunk into the ground, which of course lessens and economises the amount of brickwork required, and gives great strength and support to the sides and bottoms of the boilers. The surface of the ground is a little below the spring of the arch at the top.

The bed of the furnace, also, instead of being situated on a level with the bottom of the boiler, as represented in the drawing, is placed very nearly on the same level as the surface of the liquor. The advantage of this arrangement is, that the bridge of the furnace being low, it is not so much exposed to the direct action of the flame as a high bridge necessarily must be.

It is likewise essential that the brickwork and puddle between the back of the furnace and the boiler should be at least from 6 to 9 feet in thickness—say 5 feet of fire brick immediately behind the furnace, then 2 feet of common bricks arched at the bottom, and about 1½ feet of puddle.

The puddle covering on the top of the boiler is generally very thin, and at some of the alum works there is merely a coating of common plaster.

I may also remark, that for the evaporation of brine by surface

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heat, I am inclined to the opinion that a series of large hemispherical iron pans would be found more convenient, more lasting, and less liable to leakage than brick boilers.

FREDERICK PENNY.

The above report is quite sufficient to make the method clear to every one. The apparatus is remarkably cheap, and as an addition or appendage to other works, might be found useful, in applying waste heat and in bringing brines to saturation; but otherwise, is not equal to the methods now in use. For the 3 tons 8 cwt., or 7,619 pounds of coal only evaporate 500 cubic feet, or 31,250 pounds of water, which is but 4.1 pounds of water to 1 of coal, about one-half what could be done in a boiler.

In the Superintendent's Report for 1847 is a communication from Thomas Spencer, Esq., on the Kanawha salines. He describes these works as being "upon the navigable waters of the Great Kanawha river, fifty miles from its junction with the Ohio, two hundred miles below Wheeling. The average strength of the brine is about 32 per cent. of saturation, while that of our salines is 73. The works are located along the banks of the river on either side, for a distance of eight or ten miles, and on either side of the river, and parallel to it, about half a mile distant, are lofty mountains, which contain an inexhaustible quantity of bituminous mineral coal, which is used as a fuel at the salt works. It costs, delivered at the works, about three cents a bushel; twenty-eight bushels is estimated to the ton. For each bushel of coal consumed, the manufacturer receives in return nearly a bushel of salt. Each manufactory has its own salt-well, which is obtained by boring in solid rock to a depth varying in different wells from 1,200 to 1,800 feet.

In boring several wells for brine to supply the works highest up the river, veins of gas were struck, which rushed up through the aperture with such violence as to blow the rods used for boring several hundred feet into the river. It also brought with it a copious supply of brine. The owners of these wells have availed themselves of these accidental circumstances, and applied them to good account, as it saves them the entire expense of

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pumping brine and supplying fuel. The gas and brine are separated by a simple contrivance, the latter being conducted into capacious reservoirs, and the former into the flues or "furnaces" of their salt works, where, being ignited, it produces an intense heat, exceeding that caused by the combustion of mineral coal,"

During the past season Prof James Hall, State Geologist, visited these works; and procured for me the specimens of salt, brine, &c., which are referred to in the table of analysis. He also furnished me with memoranda for the various details of the manufacture, which are given below, and with the following letter on the geology of that district:

Salines or Brine Springs of the Valley of the Kanawha.

That portion of the valley of the Kanawha in which the Salines are situated lies in the lower coal measures. The river meanders through an alluvial bottom of half a mile to a mile in width, and this is bounded on either side by hills which rise to the height of three to eight hundred feet above the level of the river. These hills are composed of successive beds of porous sandstone, sandy shale and seams of coal, having all a gentle dip to the northwest. The distance along the river where salt springs are known to occur, or where salt wells have been bored, is about ten or twelve miles. The width of the bottom alluvial belt does not appear to affect the production or value of the brines, though the greater number of wells are on the north side, where the bottom is narrow, and those on the side where it is broader are for the most part near the margin of the river.

The first discoveries of salt water were in springs or licks upon the surface, and from these was obtained the salt used by the earlier settlers. They were, indeed, known to the Aborigines, who inhabited the country before its settlement by the whites. In the earlier attempts in the manufacture of salt, the wells were sunk no lower than the solid rock, the depth of alluvium being from twenty to thirty feet. Subsequently borings were carried into the rock, and finally to the depth of fifteen hundred feet or more. It has been found, however, by experience, that the strength of the water does not increase in descending below 700 or 800

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feet, but that below this carburetted hydrogen, which often accompanies the brines, increases in quantity. The evolution of this gas from some of the wells was early turned to account in evaporating the water by its combustion, and many wells were bored to greater depth, solely to obtain a larger supply of the gas. At the present time, however, it is regarded as of little consequence, and its use almost discontinued. The deeper boring required, and the liability of accidents to the tubes, attendant upon its evolution beneath the kettles, cause it to be regarded as of no absolute value.

The borings of these wells reveal to some extent the character of the strata beneath the surface, and which would be doubtless better studied in their outcrops farther east.

1. Alluvial formation of variable thickness.

2. Hard black slate, mixed with thin seams of coal and coaly matter, 200 to 300 feet.

3. Described as a hard blue rock, sometimes mixed with sandstone, and sometimes sandstone with layers of hard rock; this extends to four or five hundred feet from the surface.

4. Sandstone, usually friable, white on being drawn out, but becoming red on exposure to the atmosphere. This rock is variable in thickness, and often found extending from five to eight hundred feet from the surface.

5. A hard, flinty rock, the particles fine and sharp like flint, thirty to sixty feet thick. This rock, in some of the wells, is one hundred to one hundred and fifty feet thick.

6. A soft, tough, shaly rock, often called "soapstone," and is named the "*long-running rock*," from its containing little silex, and the drill runs a long time without becoming dull. This rock commences at about the depth of 900 feet or a little deeper, at the lower part of the salines, from the dip in that direction. The deepest borings have not passed through this rock, although some of the borings have penetrated it at least six hundred feet.

The brines never increase in strength or quantity after entering this rock, and it may be considered as the impervious floor of the saline accumulation.

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All the evidence which we have goes to prove very conclusively the absence of beds of rock salt in the neighborhood. The origin of the brines is therefore to be sought in some other source. The porous sandstone strata forming the coal measures, many of which were deposited in shallow ocean waters, undoubtedly retained, as all marine sedimentary rocks do, a portion of chloride of sodium. The percolation of surface water through all the superincumbent beds, has carried down this saline matter in solution to the point where it has formed an impervious stratum, where it remains, saturating the porous sandstones and filling the fissures of the surrounding beds. We cannot doubt but the source of these brines is in these carboniferous beds, and that it is widely disseminated in them, and only separated by the slow process of solution by the percolating waters from above.

The lowest point to which the brine increases in strength or quantity, would appear to be at the base of the coal measures themselves, and the hard flinty or silicious stratum may very well represent the conglomerate below the coal, while the shaly beds below the "*long-running rock*" are the fine-grained sandstones and shales which lie beneath this rock.

No rock of an age anterior to the carboniferous period rises to the surface for many miles around the salines of Kanawha.

In boring these wells, they generally go down to from 400 to 600 feet, with a bore of from 3½ to 3 inches, and below that to any required depth with a smaller bore. The upper part of the boring, for perhaps 250 feet, is then reamed out to a size of from 5 to 8 inches in diameter, and fitted with a copper tube, which is screwed together in joints 25 feet long. At the bottom of this tube the suction or draw-box is to be placed. Before setting it, however, a bag filled with flax seed and tallow is fixed and packed at the point where the 3-inch bore ends, from 400 to 600 feet below the surface. A hole from 1 to 1½ inches diameter is then made through this bag, and a tube of the same size passed through it. This tube extends from below the bag of grease and flax seed up to the suction or draw-box. The object of this bag of packing is to swell and fill the opening, so that any fresh water which collects about

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the tubes above it, may not descend and weaken the salt water below. Whenever a well yields too much weak brine, the tubing is taken out, the large opening reamed deeper, and the tubing with the bag reinserted.'

The simple boring of a well 800 or 900 feet deep, exclusive of the cost of engine, &c., costs $1,500. These wells yield from 10 to 30 gallons per minute. A well giving 20 gallons of brine at 9°* or 10°, is regarded as a good one. The quantity which will be supplied is limited, and when reached will be regular and fixed. Those which are weakest usually yield the largest quantity, which is owing to the intermixture of fresh water from above. It is a general impression, that the quantity of salt water is gradually diminishing, though the quantity and quality differ in wells dug within a hundred yards of each other. Some wells, terminating in a very porous stratum, are found to yield water more copiously than others. In some wells the quantity has greatly increased, and in others the strength has improved, as in one bored last year there has been an increase from 8° to 11½°.

Three good wells are needed for one furnace; these cost about $9,000. The cost of a furnace, and all the preparations for a salt works, is about $30,000.

The brine from the pumps is carried into a capacious cistern, located above the level of the boiler of the salt works, so that it may be drawn from one directly into the other. The boiler which is used in concentrating the brine is made in three sections, each 33 feet long, 8 feet wide, and 4 feet deep, which is equal to one boiler of 99 feet long. These sections are connected by large open pipes, below the level of the brine, so that the communication between them is free. When necessary, either one of them may be shut off, and cleaned or repaired while the others are kept in operation. The bottom of the boiler is made of concave cast iron plates, or shallow pans, each 3 feet long and 8 feet wide, cast with proper flanges and grooves, so that eleven of them may be bolted and cemented together for the bottom of a single section. The sides and top of the boiler are made of thick planks,

* 25 deg. is saturation.

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bolted to the bottom, and keyed tightly together. The fire is made under the end of the first section, and the flame and heated air pass under the sections in succession, to the chimney at the opposite end. The brine is boiled till it approaches saturation.

Near the boiler are arranged several open wooden vats, or *settling cisterns*, each 100 feet long, 8 feet wide, and 2 feet deep. Running lengthwise through each of these is a vertical partition, extending from one end almost to the other. These cisterns are filled about 18 inches deep, and are heated by steam from the boiler. This steam is carried in copper pipes which pass the length of the cistern on each side of the partition, and just beneath the surface of the water. These pipes are from 4 to 6 inches in diameter. The settling cisterns, of which there were four in the work described, are arranged so that the brine passes from the first to the second, and so on in succession. If well managed, the brine will be brought to saturation in the last cistern, and will have deposited all its oxide of iron. Following the settling cisterns is a series of others, called *graining cisterns*. These are of the same shape and size with the first, and in them the salt is deposited. They are heated by steam pipes like the others. The saturated brine is drawn into the first of them, where a considerable crop of crystals is deposited, it is then drawn by a syphon into the second, and another crop of crystals is deposited, and so on to the last one, where but a very light crop is obtained, and where all the bittern collects. In the works of Dr. Hale, where Prof. Hall obtained much of his information, there were six of these graining cisterns. The specimens of salt in the superintendent's office, and referred to in the analysis, and numbered from 1 to 6, are from these cisterns.

The bittern contains scarcely any salt. From 3,000 to 5,000 gallons are thrown away every day. It contains a large quantity of bromine.

The quantity of salt now made at Kanawha, is from 2½ to 3 million bushels a year, and the furnaces and wells now idle, are capable of increasing the product a half million bushels without any new wells.

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At one time, four years since, there were 43 furnaces in operation, and making about 3¼ million bushels annually. But the market was overstocked, and the price of salt fell to 11 or 12 cents a bushel, (50 pounds). By an agreement among the manufacturers, this overproduction is now prevented, and the amount the market will bear, is fairly divided among the several furnaces. They also agree upon what shall be the price of salt at the works. Some manufacturers find it more profitable to let their furnaces lie idle, and receive their share of the profits, upon the amount of salt they are entitled to make, from those who make more than their proportion. At present, 24 furnaces are in operation, and they will make this year 2,800,000 bushels. Salt is worth at the works, 16 cents per bushel. The association of manufacturers count it worth 18 cents a bushel, when in barrels of 280 pounds each.

The salt is generally well liked for packing meats. Lime is not used in settling the brine; it is considered injurious from experience elsewhere.

The best worked furnaces make a bushel of salt for a bushel (70 or 80 pounds) of coal. This is less than the average. Such results will only be produced from water of 9 or 10°.

The general plan of the works at Kanawha, is much like that of the late Calvin Guiteau, Esq., which was described in the Superintendent's report for 1842. It is more easily adapted to the Kanawha brines than to those of Onondaga, on account of their being much weaker, and from their not containing any sulphate of lime, which saves their boilers from incrustation or blocking. The brines contain a much larger portion of oxide of iron than ours do, but this does not make a scale; in the boiling brine it collects into little hard pellets like gravel stones, and in the settling cisterns it is deposited as a soft, muddy sediment. It is remarkable that this oxide of iron, both in its wet and its dry state, is attracted by the magnet.

The analysis shows that the Kanawha brine contains 9.2 per cent. of solid matter, of which four-fifths are salt. Allowing,

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then, that every hundred pounds of brine contain 7.4 per cent. of salt, calculation shows that to produce a bushel, 50 pounds, 625 pounds of water must be evaporated. The average yield of salt being 50 pounds for 75 pounds of coal burned, it follows that each pound of coal in burning evaporates 8.3 pounds of water. This is the full value of the coal according to Johnson's experiments; and yet I am assured by those who have visited the works, that there is a great waste of fuel, the flame after passing the whole length of the boiler, frequently streaming out at the top of the chimney.

The Kanawha method, then, becomes an interesting study for our manufacturers, the above results being much better than any which have been obtained with coal at the Onondaga salines. The difficulties which will arise, in its application to our brines, from their greater strength and the presence of a large amount of plaster in them; difficulties by no means insurmountable, as is shown by the working of the apparatus of Mr. Howd.

It remains, in conclusion, only to say that the points discussed in the preceding report are not confined in their interest to the manufacturers of salt at Onondaga. Every individual is a consumer of salt, and of course interested to obtain a pure and cheap supply; and the State of New-York is largely interested, on account of its being an important source of revenue, drawn as it is from consumers many of whom live out of the State. Should the statements and suggestions presented, awaken interest and inquiry among the manufacturers, which shall lead to the adoption of improved and economical processes, the objects of my appointment will have been accomplished.

My thanks are due to the many gentlemen who have favored me both with specimens and with information. The list would be quite too long should I mention them all by name, and it would be invidious to mention a part.

For yourself, personally and officially, accept the assurance of my highest esteem and respect.

Your obedient servant,

GEO. H. COOK.

RUTGER'S COLLEGE,
New-Brunswick, N. J., Dec. 22, 1853.

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SALT INSPECTED AT THE ONONDAGA SALT SPRINGS.

PLACES.	Solar.	Fine.	Solar ground.	Fine ground.	Aggregate bushels.
At Syracuse,	303,477	912,141	6,365	72,926	1,294,909
Salina,	116,762	2,288,869	22,433	306,136	2,734,200
Liverpool,	9,318	794,217	.....	.....	803,535
Geddes,	119,592	452,288	.....	.....	571,880
	549,149	4,447,515	28,798	379,062	5,404,524

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SALT INSPECTED AT SALINA IN 1853.

DATE.	Solar.	Fine.	Solar ground.	Fine ground.	Aggregate bushels.
For four weeks ending January 29,.....	.....	15,137	5	165	15,307
do do February 26,.....	.....	6,791	14	102	6,907
do do March 26,.....	746	6,314	.....	103	7,163
do do April 23,.....	4,391	3,424	2,598	4,430	14,843
do do May 21, ...	1,539	11,662	2,300	33,740	49,241
do do June 18,.....	.....	299,313	4,738	44,286	348,337
do do July 16,.....	34,113	314,854	2,120	41,804	392,891
do do August 13,.....	22,291	362,875	3,726	50,062	438,954
do do Septemb'r 10,.....	25,323	272,694	3,390	36,690	338,097
do do October 8,.....	18,571	305,669	3,411	42,671	370,322
do do November 5,.....	9,577	355,871	131	47,661	413,240
do do December 3,.....	211	294,032	.....	4,422	298,665
do do do 31,.....	.....	40,233	.....	....	40,233
	116,762	2,288,869	22,433	306,136	2,734,200

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SALT INSPECTED AT SYRACUSE IN 1853.

DATE.	Solar.	Fine.	Solar ground.	Fine ground.	Aggregate bushels.
For four weeks ending January 29,.....	.....	6,130	298	667	7,095
do do February 26,.....	.....	3,549	331	773	4,653
do do March 26,.....	.....	3,143	.....	900	4,043
do do April 23,.....	459	136	50	.....	645
do do May 21,.....	189	18,729	1,136	18	20,072
do do June 18,.....	294	128,788	707	14,097	143,886
do do July 16,.....	33,206	164,862	520	6,952	205,540
do do August 13,.....	49,577	138,255	555	11,457	199,844
do do September 10,.....	66,273	129,716	1,061	6,169	203,219
do do October 8,.....	60,435	129,566	262	7,673	197,936
do do November 5,.....	60,914	85,881	860	14,878	162,533
do do December 3,.....	31,504	88,926	237	7,828	128,495
do do December 31,.....	626	14,460	348	1,514	16,948
	303,477	912,141	6,365	72,926	1,294,909

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SALT INSPECTED AT LIVERPOOL IN 1853.

DATE.	Solar.	Fine.	Solar ground.	Fine ground.	Aggregate bushels.
For four weeks ending January 29,.....	.....	1,417	.....	.....	1,417
do do February 26,.....	.....	794	.....	.....	794
do do March 26,.....	.....	385	.....	.....	385
do do April 23,.....	.....	3,897	.....	.....	3,897
do do May 21,.....	.....	14,176	.....	.....	14,176
do do June 18,.....	.....	85,120	.....	.....	85,120
do do July 16,.....	.....	107,539	.....	.....	107,539
do do August 13,.....	3,990	115,272	.....	.....	119,262
do do September 10,..... ..	1,480	122,538	.....	.....	124,018
do do October 8,.....	2,552	109,475	.....	.....	112,027
do do November 5,.....	1,234	121,562	.....	.....	122,796
do do December 3,.....	29	97,993	.....	.....	98,022
do do December 31, ...	33	14,049	.....	.....	14,082
	9,318	794,217	.....	.....	803,535

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SALT INSPECTED AT GEDDES IN 1853.

DATE.	Solar.	Fine.	Solar ground.	Fine ground.	Aggregate bushels.
For four weeks ending January 29,.....	.....	694	.....	.....	694
do do February 26,.....	.....	403	.....	.....	403
do do March 26,.....	.....	6	.....	.....	6
do do April 23,.....	295	1,885	.....	.....	2,180
do do May 21,.....	.....	13,669	.....	.....	13,669
do do June 18,.....	3,580	65,037	.....	.....	68,617
do do July 16,.....	20,924	67,025	.....	.....	87,949
do do August 13,.....	24,137	60,509	.....	.....	84,646
do do Septemb'r 10,.....	21,961	71,995	.....	.....	93,956
do do October 8,.....	10,240	71,313	.....	.....	81,553
do do November 5,.....	19,484	49,628	.....	.....	69,112
do do December 3, ...	18,819	44,094	.....	.....	62,913
do do December 31,.....	152	6,030	.....	.....	6,182
	119,592	452,283	.....	.....	571,880

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SCIENTIFIC OBSERVATIONS,

Directed to be taken by the 8th section of the act passed April 8th, 1838.

MONTHS AND DAYS, 1853.	Temperature of air at 2 P. M.	Temperature of brine.	Height of Salometer.			Height of Barometer.		State of the Weather, and Remarks.	Rain.	
			Syracuse.	Salina.	Liverpool.	6 A. M.	10 P. M.		Each month.	Each month.
January 3,	33	.....	.....	.....	.....	29 598	29.738	Slight rain, 10 P. M.,	.070	
10,	51	.....	.....	.....	.....	29.764	29.725	Fair all day,	.....	
17,	10	.....	.....	.....	.....	29.746	29.666	Cloudy all day,	.....	
24,	30	.....	.....	.....	.....	28.472	29.014	Snow fell slightly all day,	.233	
31,	32	.....	.....	.....	.....	29.599	29.757	Fair all day,	.....	.683
February 7,	18	.....	.....	.....	.....	29.811	29.774	Cloudy all day,	.....	
4,	20	.....	.....	.....	.....	29.518	29.927	Snow fell slightly all day,	.130	
21,	30	.....	.....	.....	.....	29.446	29.430	Clouds cirro cumulus, 2 P. M.,	.....	
28,	39	.....	.....	.....	.....	29.428	29.194	Rain nearly all day,	.220	2.294
March 7,	40	.....	.....	.....	.....	29.536	29.467	Cloudy all day, snowed slightly 9 P. M.,	.....	
14,	18	.....	.....	.....	.....	29.379	29.670	Severe snow squalls all day,	.120	
21,	56	.....	.....	.....	.....	29.376	29.290	Clouds cirro cumulus all day,	.....	
28,	38	.....	.....	.....	.....	29 600	29.758	do do do	.....	4.410
April 4,	38	52	.....	.....	76	29.290	28.960	Rain, 9 A. M.,	.440	
11,	50	52	73	.....	76	29.918	29.710	Clouds, slight cirrus, 2 P. M.,	.....	
18,	49	52	73	.....	76	29.750	29.750	Clear all day,	.....	
25,	41	52	73	.....	77	29.490	29.600	Rain fell all day,	1.000	3.970
May 2,	60	52	72	71	76	29.980	29.770	Clear all day,	.....	
9,	.....	52	72	71	77	29.390	29 470	Commenced raining 9 P. M.,	.....	
16,	.....	52	73	72	76	29.570	29.560	Clouds nimbus, 6 A. M.,	.....	
23,	.....	52	72	72	76	29.240	29.582	do do	.....	
30,	.....	52	72	72	73	29.456	29.680	Heavy shower, 3 P. M.,	.680	4.300
June 6,	.....	52	72	70	74	29.600	29.500	Slight rain,	.....	
13,	88	52	72	63	72	29.880	29.770	Clear all day,	.....	
20,	92	52	73	67	74	29.560	29.580	Heavy rain, 2 A. M.,	.505	
27,	.....	52	72	68	72	29.590	29.614	Cloudy all day,	.....	2.305

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July	4,	81	52	72	68	73	29.570	29.490	Heavy rain, 1 P. M.,	.500
	11,	78	52	72	66	70	29.678	29.720	Clouds, slight cirrus, 6 A. M.,	.....
	18,	80	52	72	68	73	29.770	29.790	Clouds cirro cumulus,	.....
	25,	.....	52	72	68	70	29.680	29.690	.....	.....
August	1,	66	52	72	68	70	29.600	29.570	.....	.....
	8,	.....	52	72	71	70	29.700	29.760	.....	.....
	15,	88	55	72	71	69	29.660	29.700	Clouds cirrus, 10 P. M.,	.....
	22,	70	52	72	71	69	29.636	29.840	Clouds cirro cumulus, 6 A. M.,	.....
	29,	76	52	72	72	69	29.800	29.754	.....	.....
September	5,	.....	52	72	72	69	29.690	29.672	Clouds cirro cumulus, 6 A. M.,	.....
	12,	.....	52	72	70	69	29.900	29.790	.....	.....
	19,	.....	52	72	71	69	29.566	29.680	.....	.....
	26,	.....	52	72	71	70	29.940	29.708	.....	.....
October	3,	60	52	72	71	70	29.500	29.650	.....	.....
	10,	.....	52	72	71	70	29.380	29.540	Fair all day,	.....
	17,	.....	52	72	72	69	29.818	29.800	Clear all day,	.....
	24,	.....	52	73	73	72	29.680	29.290	.....	.....
	31,	.....	52	73	71	71	29.810	29.660	.....	.....
November	7,	.....	52	73	71	71	29.970	29.960	.....	.....
	14,	.....	52	73	71	72	29.430	29.390	.....	.....
	21,	.....	52	73	71	74	29.780	29.770	Slight rain,	.....
	28,	.....	52	73	71	71	30.100	30.150	Fair all day,	.....

* Temperature of brine at Liverpool, 48 degrees.

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The following is a statement of the number of bushels of salt made at the Onondaga Salt Springs since June 20th, 1797, which is the date of the first leases of salt lots.

Date.	No. of bushels.	Superintendents.
1797	25,474	Wm. Stevens.
1798	57,928	do
1799	42,574	do
1800*	50,000	do
1801†	.....	Sheldon Logan.
1802	75,593	Asa Danforth.
1803	90,335	do
1804	.....	do
1805	154,071	do
1806, from April 25	122,557	Wm. Kirkpatrick.
1807	165,448	Wm. Kirkpatrick, by Thos. Wheeler.
1808 to April 13	131,808	Wm. Kirkpatrick.
1808 from April 13	187,872	T. H. Rawson.
1809, from June 14	128,282	Nathan Stewart.
1810	450,000	John Richardson.
1811	200,000	Wm. Kirkpatrick.
1812	221,011	do
1813	226,000	do
1814	295,215	do
1815	322,058	do
1816	348,234	do
1817	448,665	do
1818	406,540	do
1819	526,049	do
1820	548,374	do
1821	458,329	do
1822	481,562	do
1823	726,988	do
1824	816,634	do
1825	757,203	do
1826	811,023	do
1827	983,410	do
1828	1,160,888	do
1829	1,291,280	do
1830	1,435,446	do
1831	1,514,037	Nehemiah H. Earll.
1832	1,652,985	do
1833	1,838,646	do
1834	1,943,252	do
1835	2,209,867	do

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Date.	No. of bushels.	Superintendents.
1836	1,912,858	Rial Wright.
1837	2,161,287	do
1838	2,575,033	do
1839	2,864,718	do
1840	2,622,305	Thomas Spencer.
1841	3,340,769	do
1842	2,291,903	do
1843	3,127,500	Rial Wright.
1844	4,003,554	do
1845	3,762,358	Enoch Marks.
1846	3,833,581	do
1847	3,951,351	do
1848	4,737,126	Robert Gere.
1849	5,083,369	do
1850	4,268,919	do
1851	4,614,117	Resigned Dec. 1, '51, Hervey Rhoades.
1852	4,922,533	Hervey Rhoades.
1853	5,404,524	do

* The amount for 1800 is from Maude's Visit to Niagara. Wm. Stevens died early in 1801.

† No report for 1801 or for 1804 have been found.

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CHIDHAM WHEAT.

When in England, in 1851, the Secretary procured some Chidham wheat. Samples of wheat were exhibited by His Royal Highness Prince Albert, grown on the royal farm at Windsor. It was among the very best varieties shown in that great exhibition of the industry of all nations, and believing that it might prove useful here, a quantity of it was secured and has been distributed in different sections of this State, as well as in other States of the Union. From the returns which have been received, it is believed, this will prove a valuable acquisition to our wheat growing districts. We annex returns received from gentlemen who have tried it; and as they uniformly speak favorably of it, it is hoped that it will answer well in our climate. The experiments of the succeeding year will doubtless fully determine its character and value here.

W. R. Coppock, Esq., Black-Rock, Erie county, writes us:

"Mr. B. P. Johnson:

Sir—I should, doubtless, ere this, have reported progress with the Chidham wheat, received from you. The seed, barely three quarts, was committed to a good piece of rather stiff clay soil, on the 24th of September, 1852, covering a strip of land eight rods by two, having a fence adjoining the long side. It came up strong and healthy, and stood eight to ten inches high by December. A remarkable feature in its character is its great multiplicity of stalks, many of which were counted, averaging from 50 to 60 to each stool. During the winter it was partially covered with snow; near the fence a drift, of three to four feet wide, remained upon it until near spring, while the balance, or strip of one rod wide,

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was subject to all the varied changes of thaws and freezing, the spring of 1853, with us, was remarkable for. As soon as the vernal season became settled, it grew with great strength and vigor; the straw strong and bright, 4½ to 5 feet high, while the ear, almost 4 inches long, yielded from 40 to 50 plump berries, equal in color and size to the seed. It had been greatly admired by all who have seen it. It was cut, full ripe, on the 14th of July, a good deal riddled by the birds; yet, after being thrashed, yielded nearly a barrel full. Had it been drilled, instead of sown broadcast, the yield would certainly have been much greater. This season, from various untoward circumstances, it was not sown until the 18th of October; the weather beautiful, with light frosts, frequently, during the nights. Now, the 16th of November, it is green and looks well, and will, I hope, survive its late planting. I have about two acres of it. My own opinion, as also that of many other practical men, who have watched it through the different stages of its growth, unhesitatingly pronounce it a valuable acquisition. No extra pains have been taken with it; it was planted on potato ground, without any fertilizers or dressings being added. I have, perhaps, been prolix in detailing its culture, but not over so, I think, for a seed so valuable as that of a new variety of wheat, which, should the succeeding crop turn out as well, will, amid other choice varieties, take the lead here."

Hon. Jeptha W. Babcock, Niagara county, writes us:

"Hon. B. P. Johnson:

Sir—Agreeable to my promise, I at this late day proceed to give you the result of my success with the two varieties of wheat you presented me, in the spring of 1852, viz: Chidham and Georgia. I sowed both varieties on the 9th of September, 1852, on rather low land, though well sided up; but the protracted wet weather in the spring injured it to some extent, as well as my other wheat in the same lot, though the side of the bed laying highest produced a bountiful growth of straw, was one third larger than the Soule's by the side of it, the heads a third larger, well filled and plump; the yield was 1½ bushels from about six rods of land. The quantity of seed being so small I had to sow broadcast, while

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the rest of the field was drilled. I have sowed the whole of the product again this year, on land better adapted to wheat, have drilled it in, and I hope, another year, to be able to give you a more favorable account of it, together with a sample of the product, with interest. The wheat ripened full as well as the Soule's; the other variety (the Georgia) had the same chance, and shared about the same fate, though it ripened some ten days earlier; the growth of straw not so large, the heads shorter but broader, well filled and very plump; had 18 lbs. from less than a pint of seed. I have faith to believe that this too will prove a valuable variety, on account of its maturing so early—it will be more likely to escape the rust.

WINTER FLAX.

We have received the annexed important communication, from Prof. Loon Falkersaborf, of Russia, of a variety of flax seed, sown as a winter crop, superior to the spring grown flax seed. The samples of the flax sent to the exhibition at New-York, show its great value. We have written for a supply of the seed, and hope to receive in time for use next fall. We are greatly obliged to Mr. Falkersaborf for thus remembering us. We formed, when in London at the exhibition, in 1851, a very pleasant acquaintance with the Special Commissioner from Russia, and are reminded, as we have been before, that we have not been forgotten. We shall, at an early day, give notice of the arrival of the seed, and shall distribute it among such farmers as may be desirous of cultivating it.

To the Agricultural Society of New-York:

Although I have not the honor of being a member of your society, it is a particular pleasure for me to send you a sample of my winter linseed, and of the flax made of the same; both I have directed to the Exhibition, New-York, to be afterwards consigned to you; and you will please to accept them as a token of my esteem. After many efforts and repeated essays, I met with suc-

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cess, and am now enabled to produce a winter seed crop, which furnishes a splendid flax, more silk-like than any other, as the sample No. 1 shows.

a. Besides it has the advantages to be sown in the fall, not subject to be sown either too early or too late, as this is often the case with the spring seed, and has always a failure of the crop in its train.

b. That the winter seed shoots sooner, yet before the weeds come out, which latter are kept back by it; it is earlier ripe, and can be brought in before the hands are wanted for other agricultural operations.

c. In order to prevent the shooting in the fall, the seed must be worked in by the plow as late as possible, and then the seed is not damaged neither by twenty degrees of cold (Reaumur.) In the spring, as soon as the field is dry, it must be lightly harrowed. It shoots with the first rays of the warm sun, and is already in flower when other spring seed is sown, and before the insects can do it any harm.

d. This winter seed is glossy, but dark and mixed with black grains, yet all shoot. It is a great deal more oily than the common seed.

If you will indicate the means by which to forward it, I am ready to send you a sufficient quantity of this seed, of course without payment. I would be happy to enter in connexion and correspondence with you. Your answer you can send me by means of the Ambassador, by the Imp. Agricultural Society at Petersburgh, or direct by mail, addressed "Kurland, Liebau a Paperboff." I should like to have some seed of the Maclura aurantiaca; and also, at due time, some notices about your exhibition. I am at any time ready to serve you also with the seed whose weed furnishes the persiese powder for killing insects of all kinds.

LOON FALKERSABORF,

Member of the Scientific Committee in the Ministerial Domain of the Imperial Geographical, Natural, Philosophical, Historical, Horticolar and Ag. Soc. at St. Petersburgh, Moskowa, Finland, Caucasas, &c. &c. &c., and real, corresponding or honorary member in almost all the European States.

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APPLE TREE PESTS.

Schonherr's Weevil and the Orchard Moth.—Asa Fitch, M. D., Salem, N. Y.

Salem, N. Y., June 30, 1853.

Hon. B. P. JOHNSON: My Dear Sir—The Michigan insects reached me in safety. They pertain to the weevil family (CURCULIONIDÆ), and are one of the largest of that kind of insects which we have in this country. They are the *Pachyrhynchus Schonherri*, so named by the late Rev. Mr. Kirby, in honor of the Swedish entomologist Schonherr, who has devoted a great deal of attention to this family of beetles, so noted for the injuries which they inflict, and who has published several volumes upon them. Mr. Kirby's description of this species may be found in the Zoology of the Northern Parts of British America, vol. iv, page 103. It also appears, from the short description given in Turton's System of Nature, vol. 2, page 264, to be the species named *Curculio Noveboracensis*, or the New-York weevil, by Forster; but not having Forster's work at hand, I am unable to speak decidedly. It is rather a rare insect, I should judge, for I have never seen but three specimens of it heretofore. One of these I captured in this (Washington) county, twenty years ago. The others were sent to me, one from Long Island, and the other from Rhode Island. Mr. Kirby's specimens were taken in Canada.

This weevil, though variable in size, is commonly over half an inch in length, and is about two and a half lines broad. It is of a gray color, produced by short whitish hairs upon a black ground. Upon the thorax are three white stripes, more or less distinct, and upon each wing-cover are four white stripes which are interrupted by small black spots. These marks will suffice to distinguish this from other insects. We have a long-horned beetle, the grub of which lives in pine timber—the *Rhagium lineatum*—which is much more common, and strikingly resembles this weevil in size, color and form, but is readily distinguished from it, by having a projecting spine, or tooth, on each side of the thorax.

Hitherto, so far as I am aware, nothing has been known respecting the habits of this weevil; and the facts mentioned by Mr. Wetmore, that it eats the young buds and tender twigs of the

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apple tree, causing them to wilt and die, passing from one bud to another, and, when satisfied, concealing itself under a leaf, until prompted by hunger, it crawls forth to take another repast, are very interesting, and will not fail to attract the notice of the fruit culturist. When these insects are present in numbers upon a tree, perhaps the best mode to get rid of them will be to spread sheets under the tree, and then shake the tree, or beat upon it with a pole. The insects, thus disturbed, will drop upon the sheets, and may be gathered up and killed by throwing them into a kettle of boiling water. They may then be fed to the hens.

Should a favorable season, or any other cause, lead to its becoming greatly multiplied at any time, it is easy to perceive that this weevil would be a great pest in our orchards. And that it will become thus multiplied, now and then, in particular districts, I do not doubt, history will show—this being the case with nearly all of our injurious insects. Commonly, their numbers are so few, that no notice is taken of their depredations. But, at times, they become so excessively numerous, as to commit great havoc and prove themselves a terrible scourge. An instance of this has recently been communicated to me. The common May beetle of our country, *Phyllophaga quercina*, as it is named in Dr. Harris's Treatise on Injurious Insects, (a work by the by, which should be in the hands of every farmer, gardener and fruit grower, now that a new edition has rendered it attainable to all,) is seldom noticed as being a depredator at least in this section of the State. Milo Ingalsbe, Esq., President of our county Agricultural Society, informs me that upon his place at South Hartford, he has about seventy plum trees, which were splendidly in bloom on the 15th of May last, together with a number of cherry trees of several of the improved varieties. In the course of two nights afterwards, however, this May beetle suddenly hatched out in such astonishing numbers as to wholly strip these trees of their leaves, buds and blossoms, leaving many of them as naked as in mid-winter, and destroying all hopes of any fruit the present year.

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But a still more remarkable instance of the excessive multiplication and consequent havoc caused by an insect not previously noticed, has occurred in this vicinity, since I received your letter. Indeed it surpasses every thing of the kind that has been hitherto experienced in this county since the date of its settlement. On the 19th instant, a man from Cambridge inquired of me whether I had observed the worms upon the apple trees, saying that all the orchards in that town were being stripped of their leaves. Next day, on going to my apple trees, I found the worm alluded to, upon all of them, committing great havoc; and a gentleman from Argyle informed me that within two and three days past they had been observed, overrunning all the apple trees there. Upon the 23d instant, the circuit court being in session in the village of Salem, I saw persons from most towns of the county, and learned that this worm was ravaging every orchard within our borders, without exception. Some idea of the value of our orchards and the amount of damage which this pest threatens to do us, may be formed from the fact, that two years ago, to supply the vacancies produced by trees that had perished, and to plant new orchards upon some farms, an agent from one single nursery disposed of young trees in this county, to the amount of $10,000. As it well may, therefore, this worm at present forms the leading topic of conversation in every circle, and our newspapers are giving notices of it in their columns. And the crude and erroneous notions that are being formed and circulated respecting it, show, in a most humiliating manner, the gross ignorance which pervades our country, upon topics of this kind. One gentleman tells me, that in a conversation with the most noted and experienced nurseryman in our county, they had mutually come to the conclusion that this worm had been bred by what in his neighborhood is termed "the little green insect." On inquiry, I ascertained that this little green insect, so called because they know no other name for it, was nothing more nor less than the *Aphis mali*, or Apple-leaf Louse. And the idea that this louse breeds these worms, is rather more wild than it would be to conjecture that fleas breed bed-bugs. One of our most intelligent and successful farmers, who sometimes wields his pen as well as his scythe and hoe, favored me with the *recherche* information, that this is the

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"canker-worm"—at least, said he, it is the very same worm which was called the canker-worm in Connecticut, when I was a boy. Had my good friend asseverated that the moon was made of green cheese, he would scarcely have surprised me more. I overheard another gentleman, a graduate of one of our best colleges, recommending to another similarly educated citizen, to bore his apple trees, fill the hole with sulphur, and close it by inserting a plug "made from the wood of the same tree." Methought he ought to have added, that the hole should be made with "a silver bullet," or at least that this operation should be done "in the old o' the moon."

Friend Johnson, posterity will only need what I have above stated, to show them that mauger all our vaunted light and intelligence, in this, one of the most important branches of natural science to the farmer, and one of the most interesting departments of nature's works to every studious and inquiring mind, our country, at the present day, is sunk in Egyptian darkness. In diffusive information, so far as respects Entomology, we are lagging far behind the subjects of several of the monarchical and despotic governments of the old world. In Germany and Prussia, countries which are regarded as much less enlightened than our own, not merely is a professor of this science deemed indispensible in every university, and every agricultural seminary, but its rudiments are taught in all their primary schools. In this country, on the other hand, such a thing as a course of lectures upon this science, has never yet been delivered, except perhaps in one or two of our universities. Indeed much of the very foundation of this science, upon this side of the Atlantic, is yet to be laid. Whole groups and families of our insects have never yet been examined. We have not even names by which to designate a considerable portion of our species. Take this apple tree worm, for instance. It belongs to a family of insects, of which, in Great Britain, there are upwards of 300 species. Our own country, we may safely assume, contains at least double this number. And of our 600 American insects of this family, how many, think you, have been examined and described? So far as I am able to ascertain, there are *three* species *only!* In no other de-

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partment of science is an exploration so urgently required, so loudly called for, as in this. Scarcely a week passes, but that one and another within the circle of my acquaintance, is coming to me with some insect which he has detected, preying upon some article of property; of which insect he is anxious to know the name, habits and remedies. Within the past forty-eight hours, one has brought me a worm which is infesting the roots of his squashes, melons and cucumbers, and has killed a large part of these plants in his and his neighbors' gardens; another has shown me some pea-pods, containing a worm which is devouring the young peas; a third has brought in some tomato plants, wilted and destroyed by a grub that has perforated the stalk; and a young lady has submitted to my notice some caterpillars, which she finds devouring her roses. Such facts forcibly show how much, how very much we need a thorough investigation of the Entomology of our country. It is indeed surprising that this branch of natural science, in an economical aspect second to no other in its importance, should have remained to this day so lamentably neglected. In that valuable series of volumes, the Natural History of the State of New-York, we are presented with a full description of every object in the animal, vegetable and mineral kingdoms, that exists within our borders—save only our insects. This most important hiatus remains to be filled, to complete that great work, and render it full and entire as it was designed to be. Each succeeding year is showing how urgently we need the information which this part of that work would furnish us. Why should its completion be longer delayed? The pecuniary loss which we shall sustain the present year, from this one insect which is now devastating our orchards, is probably greater than will be the whole cost of a survey of the insects of the State.

I have only space left to give you a short description of this apple tree worm, reserving a more extended account of it for a future occasion, when I shall have had opportunities for studying its entire history.

It is a cylindrical caterpillar, somewhat resembling a span worm. It has sixteen feet, and is scarcely half an inch long

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when full grown. It varies considerably in its colors and marks, but is commonly of a pale yellowish or greenish hue, with a dusky stripe on each side of the back, running the whole length of its body. Above this, a narrower whitish stripe is more or less distinct, and along the middle of the back is a slender dusky stripe, between the whitish ones. With a magnifying glass some black dots, regularly arranged, may be seen along the back and sides, each dot having a short hair growing from it. The head is polished, and of the yellow color of bees-wax. Some worms are met with, however, having black heads. Whether these are a different species or not, can only be determined when the insect has attained its perfect state. They subsist upon the leaves, eating holes in them, and often devouring all except the coarse veins of the leaf. They also gnaw the young apples, causing them to wilt and fall from the tree. Our crop of apples for the present year is totally destroyed, and it is probable that many of the trees will die also, their foilage being wholly consumed, so that the trees look brown, as though they had been scorched by fire. When the tree is shook or jarred, many of the worms let themselves suddenly down from it, some to the ground, others suspended in the air by a fine thread like gossamer, which they spin. If it is menaced or annoyed when on the ground, with a wriggling motion it runs backwards and forwards with surprising agility. This worm evidently belongs to the family of leaf-rolling moths, (Tortricidæ); and some of these worms may be seen hid in a slight covert which they form by folding the edge of the leaf, or folding it in a cylinder, or drawing two leaves together with their cobweb-like threads. Most of the worms, however, do not attempt to form any such covering for their concealment.

When the worm gets its growth, it crawls away from the tree, and under some leaf or other slight shelter on the surface of the ground, spins a little, oval, paper-like cocoon, of a gray color, about 18-100ths of an inch long, and a third as broad, within which it changes to a pupa. Analogy teaches us that from this pupa will come a winged moth or miller, such as often flutters about our candles in the evening. This moth will lay its eggs upon the leaves or in the chinks of the bark of the apple tree;

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from which eggs another generation of these worms will be hatched. Dry, hot weather, in the month of June, it is certain, favors the multiplication of these worms. Before they were observed, it was currently remarked that such a spell of sultry, dry weather as we then had, was never before known so early in the season. On the night of June 23d we had heavy thunder showers, and the next day few of these worms could be found upon the trees. And though they are still present (June 30th) their numbers are now greatly reduced. Query—will not drenching the trees with water from a garden or fire engine prove to be the most effectual way of ridding them of these worms.

On beating and shaking the apple trees, I have repeatedly seen a moth fly from among the leaves, which I have little doubt is the parent of these worms. It is a delicate, pretty little insect, measuring six-tenths of an inch across its wings when they are spread. Its fore wings are of a shining pale yellow color, coarsely freckled with darker orange-yellow spots. The hind ends of its wings are occupied with a broad band of a purple color, blended with orange, and towards the outer or costal edge with a pale yellow. This band is double the width upon the costal that it is upon the inner side of the wing, and its anterior margin is slightly hollowed or concave; and running parallel with the anterior margin is a curved stripe, of an orange color, often tinged with purple, extending across the wing, slightly forward of its middle. The hind wings are grayish-brown, and white anteriorly on the outer side. This moth pertains to the genius *Argyro-lapia*, and the sub-genius *Lozopera* of the distinguished British Entomologist, Mr. Stephens; and as this species does not appear to have been hitherto described, I propose to call it the *Argyrolepia pomariana*, the specific name being derived from the Latin, *pomarium*, which, translated, will give us for the common name of this insect, *the Orchard Moth*, or, if we wish to be more definite, the *Orchard Argyrolepia*.

Our forests at present are infested to an unusual extent with a worm so exactly like that in the orchards, that every body regards them as being identical; nor have I been able to detect any marks by which they can be told the one from the other. Still, it is

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probable that they are distinct species. I have hitherto, in July and August, in different years, captured a moth in our forests, very like the Orchard Moth above described, and which I am inclined to regard as the parent of these forest worms. It is very slightly larger than the Orchard Moth; its fore wings are bright ochre-yellow, many of the scales sparkling with the lustre of burnished gold, and instead of being freckled, they are covered with crinkled, irregular, transverse lines of an orange color; the purplish stripe forward of the middle of the wings, is widened as it approaches the costal edge, and is prolonged upon this edge to the base of the wing; and posteriorly, instead of the broad band, there is only a spot of purple blended with orange, situated on the costal edge forward of the apex; the hind wings are white. In my collection, I have named this species *Argyrolepia sylvaticana* or the *Forest Moth*. We also have, in this State, two or three other species closely resembling those described, but I know nothing of their habits.

Yours truly, ASA FITCH.

P. S. *July 23d.*—Informed that the number of the Journal of the New-York State Agricultural Society for August, had gone to press when the above communication reached you, and that it could not, therefore, appear until the issue of the succeeding number, as it was a topic in which our community was much interested, and erroneous views were being imbibed, I handed a copy of it to the Salem Press, in which newspaper it was published on the 12th inst., and copies were mailed upon the following day, to my several agricultural and scientific friends throughout the country. A few days after it was written, from the cocoons alluded to, I obtained the winged moth, from which it was evident that the species of *Argyrolepia*, which I had described, was produced by some other worm, as yet unknown, which probably infests our apple trees; whilst the worm which has done so much havoc this season, instead of pertaining to the family TORTRICIDÆ, as all its habits so strongly indicated, in reality belongs to the TINEIDÆ, the family which includes the clothes moths and other species which subsist upon fur, grease, and various other articles of household stuff, and which make cylindrical burrows through

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the substances on which they feed, and have other habits, in the main very unlike those of this apple tree worm. The winged moths which this apple tree worm produces, belong to the genus named *Chætochilus*, by Stephens and Westwood, *Rhinosia*, by Treitschke, *Ypsolophus*, by Curtis, and *Aneychia*, (probably) by Hubner. Which of these several names was first published, and therefore has the right to be retained for our insect, I have not at hand the means for ascertaining; the name of Treitschke, however, must be rejected, Mr. Kirby having long since given the name *Rhinosia*, to a genus of weevils. The insects of this genus are chiefly distinguished by having their feelers clothed at base with very long scales, which project horizontally forward from the head, resembling a beak, and from the middle of the upper side of these scales, the last joint of the feelers is protruded upwards like a spur.

I had prepared a description of this moth, to be appended to the account which I had already given, but have to-day received from Dr. Harris a slip of a newspaper communication, dated the 19th inst., in which he names and describes it, from specimens which he has recently reared from some of the worms sent to him. He names it *Rhinosia pometella* (from the Latin *pometum*, a synonym of *pometarium*) or "The little Rhinosia of the orchard." But, for the reason above stated, I think we must adopt Mr. Stephens's generic name, and call our insect *Chætochilus pometellus*. Dr. Harris describes the species, as follows: "Fore-wings ash-gray, sprinkled with blackish dots, three of which, larger than the rest, are placed triangularly near the middle, a dusky, transverse band near the tips, and a curved row of seven black dots at the origin of the terminal fringe. Hind-wings, dusky, with a leaden lustre, black veins, and very long black fringes. Body and legs beneath, yellowish-white, with the lustre of satin. Expansion of the wings, five-eighths of an inch."

This description applies with sufficient exactness to the insect, which, however, is subject to great variety. I have a host of specimens before me, reared from the worms, and captured upon the wing every where in our orchards and forests, since the first week of the present month. On the 8th inst., a large white oak

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tree was observed, wholly stripped of its leaves, save merely a few fragments upon some of the lowest limbs; and at every step taken among the weeds and grass growing beneath this tree, a swarm of these moths would arise. An inspection of the several specimens in my possession shows that no two individuals are exactly alike in all their details. The general color of the fore-wings varies from tarnished cream-white to dark ash-gray, often with a pale purplish-red reflection, and mottled more or less with darker cloud-like spots of tawny yellowish-brown, which spots sometimes form four equidistant transverse bands. There are often two larger black dots slightly forward of the middle of the wing, and two others half way from these to the tip; but these dots are sometimes indistinct or wholly wanting. The seven black dots in a semicircular row, at the base of the terminal fringe, are almost always present. The veins of the hind-wings are commonly darker than the general surface; the fringe is of the same color or sometimes lighter.

Associated with this species, both in our orchards and forests, may frequently be met with another moth of the same size and general appearance, and with its body and wings similarly colored and dotted, but having only the outer or costal half of the fore-wings of a dull cream-white or ash-gray color, whilst the inner half, the whole length of the wing, is of a brownish-black, the one color not shaded gradually into the other, but the transition being abrupt. I have named this the Comrade Moth, *Chætochilus contubernalellus*, from the latin *contubernalis*, a comrade. The worms which this moth breeds, doubtless infest the apple and other trees the same as those of the other species. As already intimated, I propose preparing a full account of these insects, at an early day. A. F.

Note.—A gentleman of Albany, who has a farm a short distance from town, discovered these worms upon his apple trees, having destroyed the leaves upon two trees. He procured some whale oil soap, diluted it with water, and with a garden engine thoroughly drenched the remainder of his trees, and they were entirely preserved from the ravages of the worms. J.

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[Letter from Dr. Thaddeus William Harris.]

CAMBRIDGE, MASS., *July* 23, 1853.

Hon. B. P. JOHNSON: Dear Sir—I have read, with some interest, your communication, on some insects that are injurious to the buds and young twigs of the apple tree in Michigan, contained in the Journal of the New-York State Agricultural Society, for July, and also the reply of Dr. Fitch, and his account of other destructive insects, printed in the Salem Press, of the 12th instant.

On the 22d of June, P. Barry, Esq., the editor of "the Horticulturist," sent to me a beetle and an apple tree twig, with the following remarks: "A gentleman in Wisconsin encloses me the weevil and piece of apple tree which accompany this. He says they are very destructive to his apple and pear trees, and occasionally to his plum and cherry trees. They attack the branch, generally, at the base of a young shoot, and eat it to the pith. He thinks it must operate in the night, as he can not find it in the day. Have you seen it in Massachusetts?"

This large weevil is the *Ithycerus Noveboracensis* of my catalogue of the insects of Massachusetts, printed in 1835, or the *Curculio Noveboracensis* of Forster's Centuria, printed in 1771. It is, undoubtedly, the same species that is referred to in your communication, and in Dr. Fitch's reply. Though not a very abundant species here, it is by no means rare, and it seems to have a wide range through the country, being found in most of the New-England States, inthe Middle and in the Western States, in Canada and in Newfoundland. I have taken it in Massachusetts, on forest trees, particularly oaks, in June and July; but never met with it on fruit trees. Nothing is known to me of the habits of the insect in its early stages.

John Reinhold Forster, the first describer of this fine species, found it, as we learn from his "Catalogue," in "a most select and numerous collection of American animals, belonging to a lady in Lancashire." This lady was the celebrated Anne Blackburne, eldest daughter of John Blackburne, Esq., of Warrington, England. She received it, with other insects, from New-York, whence it was probably sent by one of her brothers, who resided in this

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country. The specific name *Noveboracensis*, given to it by Forster, commemorates the place whence it came, and, having priority in point of time over other names subsequently given to the same species, must be retained. Gmelin, in 1788, and Olivier, in 1790, redescribed it under the same name.* It is the *Rynchites curculionoides*, of Herbst, who figured and described it in 1797, from specimens in a museum, rich in North American insects, belonging to Mr. Herschel, the court musician at Hanover, in Germany, a near relative of Sir William Herschel, the astronomer. In 1833, the Chevalier Schonherr, the author of an extensive work on the weevil tribe, gave it the name of *Ithycerus curculionoides*, unfortunately adopting the specific appellation bestowed upon it by Herbst, rather than the earlier one of Forster. Lastly, in 1837, Mr. Kirby, apparently not aware that the insect had already been made known, described it under the new name of *Pachyrhynchus Schonherri*, which must give place, as a synonym, to *Ithycerus Noveboracensis*.

By Monday's mail, I propose sending to you the Cambridge Chronicle of this date. You will find therein an account of the Palmer worm of New-England, which has lately done much damage to orchards in various parts of the country. I hear of it throughout the valley of the Connecticut, and nearly to the White mountains of New-Hampshire. It also prevails in the valley of the Housatonic, and as stated by my friend, Dr. Plumb, of Salisbury, and by Dr. Fitch, to a considerable extent in the valley of the Hudson. Should we have a second visitation of the insect during the present summer, orchards must suffer severely from its ravages. From the scientific name and description, which is given in the Chronicle, of the moth produced from it, you will perceive that the latter is a very different insect from the two moths described by Dr. Fitch.

Respectfully, your friend and serv't,

THADDEUS WILLIAM HARRIS.

* In 1781, the Danish Naturalist, Fabricius, having met with a specimen from Newfoundland, in the collection of Sir Joseph Banks, described it under the name of *Curculio punctatulus*.

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THE PALMER WORM.

BY DR. THADDEUS WILLIAM HARRIS.

During the month of June, a small worm, or naked caterpillar, has been observed on apple trees, in large numbers, throughout the greater part of New-England, and in the valley of the Hudson, in New-York. By some persons it was thought to be a new comer; and by others was mistaken for a second generation of the canker worm, which disappeared about the time that these smaller insects began their ravages. This, however, is by no means the first visitation of the insect in such unwelcome and destructive profusion. As long ago as the year 1791, it prevailed through many parts of New-England, during the month of June, and at that time received the name of the *Palmer worm.* Some account of its ravages in orchards, and even among forest trees, at that date, may be found under the head of *insects*, in the second edition of Dr. Deane's "New-England Farmer and Georgical Dictionary."

Communications concerning this insect, several of them accompanied by specimens, have been sent to me from Bradford, Andover, and Westford, Mass.; from New Boston and Keene, New-Hampshire; from New Haven and Salisbury, Conn.; and from Providence, R. I. Apple, cherry and plum trees in my own garden, also afforded me a few of the same insects, which were first observed there about the 10th of June. Within the past three weeks, numerous accounts of this supposed new or hitherto unnoticed depredator, have been published in all our agricultural newspapers. In some places, orchards have suffered from these insects in the same way and to as great an extent as from the ravages of canker worms; and in some cases, not only the leaves, but the young fruit has been destroyed by them.

These worms, or caterpillars, grow to the length of about half an inch. Though varying somewhat in hue, they are mostly of a pale yellowish green color, with two blackish lines along the top of the back, and a brownish head. Under a magnifier, a few short hairs can be seen on the body, arising singly from little black points, arranged in threes on each side of every ring; and there are usually two, more or less conspicuous, semicircular,

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blackish spots on the top of the first ring. They have sixteen feet; the first three pairs being jointed, and ending with a point or claw, the others, fleshy tubercles without proper joints. They are very impatient of being touched, and on being taken into the hand, move with great agility, and by jerks, both forwards and backwards. When the trees are shaken, the insects spin down, and hang suspended by threads. Probably most of them leave the trees in the same way, when their course is finished. In some places, it was observed, that they all took their departure during heavy showers, towards the end of June. My official engagements, at that time, prevented my observing their progress abroad.

All the specimens sent to me, that remained alive, together with a few from my trees, were put into a wide-mouthed bottle, and were supplied with leaves. About the 28th of June, some of these worms began to cover themselves with a transparent web, formed of a few delicate silken threads. One of them was transformed to a chrysalis, within its web, on the 5th of July, and became a winged moth on the 9th; having remained in the chrysalis state only four days. Others were more tardy in their transformations; and one still remains a chrysalis. More than half of the whole were unable to take this form, having perished in the worm state, from the attacks of an internal parasite, a minute grub, which, after preying on the vitals of its victim, left the body and spun itself a little oval whitish cocoon or pod, from which it emerged soon afterwards as a tiny four-winged ichneumon fly.

The chrysalis of the palmer worm is only one quarter of an inch long. It is of a pale brown color, and differs from that of the common bud worm, in not having any transverse rows of teeth around the body. The moth is of an ashen gray color above, whitish, and lustrous like satin beneath. The fore wings are very narrow, and are sprinkled with a few black dots, three of which, near the middle, are larger than the rest. The hind wings are also narrow, blackish, and surrounded by very broad fringes. The antennæ are bristle-formed. The palpi, or feelers, project horizontally from the head, in the form of a brush-like snout, and

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from the middle of the upper side of each of them, arises the curved and pointed terminal joint, like a little spur. The tongue is spirally rolled, and when extended, measures about half the length of the antennæ. This little moth rests with the fore part of the body slightly elevated, the narrow wings horizontally incumbent upon the body, and the antennæ turned backwards, and lying straight upon the wings. The insect may now be seen on the wing, in the evening, soon after sunset; and it may also be found in considerable numbers, among the grass, at a somewhat earlier hour.

A scientific name and character, with the classification of this moth, remain to be given. It belongs to a group or tribe called TINEADÆ, and to the genus *Rhinosia* of Treitschke, or *Chætochilus* of Stephens. Most of the insects belonging to the above named tribe, are of small size, and have diminutive specific names, ending in *ella*. As this insect frequents the orchard (in latin *pometum*) it may be called *Rhinosia pometella*, the little Rhinosia, or the little Snout-moth of the orchard. From other species of the same genus, it may be distinguished by the following characters: Fore-wings, ash-gray, sprinkled with blackish dots, three of which, larger than the rest, are placed triangularly near the middle; a dusky transverse band near the tips, and a curved row of seven black dots at the origin of the terminal fringe. Hind-wings, dusky, with a leaden lustre, black veins, and very long black fringes. Body and legs beneath, yellowish white, with the lustre of satin. Length, from the forehead to the ends of the closed wings, five sixteenths of an inch. Expansion of the wings, five eighths of an inch.

Some hope may be entertained that the little parasites, alluded to in the foregoing account, may tend greatly to check the future undue increase of the palmer worms. Should a second generation of the latter appear during the present summer, or should we have another visitation of them next year, or at any future time, some means for arresting their depredations may become necessary. Showering the trees with soap-suds, or a solution of whale-oil soap, or with lime-water, dusting ashes or air-slacked lime on the leaves, when wet with dew or rain, or casting dry sand upon the trees, may be found serviceable. T. W. HARRIS.

Cambridge, Mass., July 19, 1853.

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ANNUAL MEETING N. Y. STATE AGRICULTURAL SOCIETY.

WEDNESDAY, *8th February*, 1854.

At 12 o'clock the Society was called to order in the Assembly Chamber by the President L. G. Morris.

The roll of members was called.

The reports of the Treasurer and of the Executive Committee were read, and on motion of Hon. T. C. Peters, adopted.

RECEIPTS.

1853.			
Febr. 9.	Life members—annual meeting..	$60 00	
	Members—annual meeting,.....	178 00	
	Tickets—exhibition,.....	164 39	
			$402 39
	Interest on monies loaned,..... ...		420 00
	From State Treasurer,.....		700 00
March 5.	Bond and mortg., $2,000, and int. $58.33,		2,058 33
August.	Temporary loans, (less int.) $17,.....		1,083 00
	Bond and mortgage, $2,000, and interest $26.05, ...		2,026 05
Sept'br.	Life members—State Fair,....	$110 00	
	Members,.....	3,145 00	
	Tickets,.....	2,754 00	
		$6,009 00	
	Less counterfeit bills,.....	14 00	
			5,995 00
			$12,684 77

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EXPENDITURES.

1853.

By paid premiums, winter meeting,.....	$686 00	
do Utica and Rochester,.	613 16	
do Saratoga Fair,.....	3,465 38	
		$4,764 54
Expenses, winter meeting,.....		250 50
do Fair at Saratoga, ...		2,028 68
Incidental and miscellaneous expenses,.....		173 92
Printing and advertising,.....		338 07
Expenses, museum,.....		225 73
Postages,.....		149 02
Library, ...		75 79
Salaries and travelling expenses,..... ...		2,352 59
Surveys of counties,.....		421 00
Assignt. bond and mortgages,.....		2 25
Loan account paid, ...		1,100 00
Balance to new account,.....		802 68
		$12,684 77
Funds invested, bond and mortgage,.....		$2,000 00
Medals and plate,.....	$211 35	
Premium books,.....	160 00	
		371 35
		$2,371 35

Mr. Peters laid upon the table the following resolution:

Resolved, That the Legislature be requested to take such measures, at this present session, as will ensure, at an early day, the alteration of the Old State Hall, so as to furnish suitable rooms for the accommodation of the N. Y. State Agricultural Society. Which was subsequently taken up and adopted.

Mr. D. S. Wood offered the following resolution:

Resolved, That a committee of three be appointed from each judicial district, by the members in attendance from said district, to nominate the officers of the Society, and to recommend the place for the holding of the next Annual Fair.

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And the question being taken on the resolution, it was adopted.

The delegates in attendance proceeded to the choice of the said committee, as follows:

COMMITTEE.

First—Ambrose Stevens, John C. Jackson, C. M. Saxton, N. Y.

Second—John A. King, Queens; William Kelly, Dutchess; A. B. Conger, Rockland.

Third—George Vail, Rensselaer; E. P. Prentice, Albany; Anthony Van Bergen, Greene.

Fourth—Le Roy Mowry, Washington; J. T. Blanchard, Saratoga; George V. Hogle, Clinton.

Fifth—Henry Wager, Oneida; George Geddes, Onondaga; William Ives, Jefferson.

Sixth—Benjamin Enos, Madison; Charles Morrell, Tompkins; George J. Barber, Cortland.

Seventh—J. M. Sherwood, Cayuga; A. B. Dickinson, Steuben; M. H. Clark, Ontario.

Eighth—S. M. Burroughs, Orleans; E. C. Dibble, Genesee; Lewis F. Allen, Erie.

And the Society took a recess to 4 o'clock.

FOUR O'CLOCK, P. M.

The Society again met.

Mr. JOHN A. KING, as chairman of the committee of nomination, reported the following list of officers:

President—WILLIAM KELLY, Rhinebeck, Dutchess county.

Vice Presidents—J. C. JACKSON, New-York; A. B. CONGER, Rockland; GEO. VAIL, Rensselaer; LE ROY MOWRY, Washington; J. C. WOODRUFF, Onondaga; J. BARBER, Cortland; D. H. ABELL, Livingston; S. M. BURROUGHS, Orleans.

Corresponding Secretary—B. P. JOHNSON, Albany.

Recording Secretary—E. CORNING, JR., Albany.

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Treasurer—B. B. KIRTLAND, Rensselaer.

Executive Committee—EDGAR C. DIBBLE, Genesee; ELON COMSTOCK, Oneida; CHAS. MORRELL, Tompkins; T. B. ARDEN, Putnam; AMBROSE STEVENS, New-York.

Mr. PETERS moved to lay on the table so much of the report, as recommends the city of New-York as the place at which the next Annual Fair shall be held.

Mr. PETERS, also moved that the election of officers be had.

The several officers named in the report of the committee were duly elected by ballot.

Mr. BURROUGHS, of Orleans, moved to postpone the consideration of the resolution as to the location of the Fair, and by consent of mover it was postponed for the present.

Mr. SHERMAN, of Jefferson, called for the reading of the report of the committee on location.

Mr. E. COMSTOCK, from the committee appointed last year, to examine and report upon the expediency of selecting permanent locations for the annual fairs, reported favorably.

Mr. KING, in order to elicit discussion, moved the adoption of the proposition.

Messrs. BURROUGHS, of Orleans, and PETERS, of Genesee, opposed the adoption of the report.

Mr. CLARK, of Otsego, favored its adoption.

Mr. GEDDES, of Onondaga, now offered a resolution, declaring it inexpedient to concur with the views of the committee.

Further discussion ensued, when

Mr. STEVENS, of New-York, moved to lay the report of the committee on the table, and that it be printed.

Mr. GEDDES withdrew his motion, and Mr. STEVENS'S was adopted.

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Mr. Stevens gave notice of an amendment of the constitution, as follows:

"That the location of the annual fairs be made permanent, or for a term of years, at one or more places."

Mr. Enos, of Madison, now called from the table the portion of the report in relation to the place for holding the next fair.

Mr. T. C. Peters, moved that it is inexpedient for the Society to hold its next meeting in the city of New-York.

Mr. Paige moved to lay the resolution on the table.

And the question being taken, the Society refused to lay the resolution on the table.

Mr. Terrell, of Oswego, moved to amend by striking out the city of New-York and inserting the city of Syracuse.

Mr. Dickinson, of Steuben, advocated the holding of the next fair at Elmira, Chemung county, and moved to amend to that effect.

Mr. Eastman, of Oneida, offered the following preamble and resolution:

"Whereas it is deemed inexpedient for this meeting to express any opinion in regard to the location of the next Annual Fair of this Society, deeming that question as very wisely belonging to the board of officers of the Society: therefore,

Resolved, That the report of the committee on this subject be referred to the Executive Committee.

Mr. Stevens moved to lay the whole subject on the table, except the report. [Agreed to.

Mr. Geddes moved to amend by inserting Syracuse in place of New-York. [Lost 50 to 52.

The report of the committee was then adopted.

Recess to 8, p. m., to hear a lecture by Prof. Carr.

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EIGHT O'CLOCK, P. M.

The Society met at 8 o'clock, in the Assembly Chamber: the President in the chair.

The President then introduced to the Society, Prof. E. Carr, of the Albany University, who delivered a very able and appropriate address, on the Connection of Science with Agriculture; when he had concluded,

On motion of Mr. H. Keeler, of Westchester county,

Resolved, That the thanks of the Society be most cordially rendered to Prof E. Carr, of the Albany University, for his very able and appropriate address, delivered this evening, and that he be requested to furnish a copy of the same for publication in the Transactions of the Society.

On motion of Mr. L. F. Allen, of Erie,

Resolved, That the Executive Committee be requested, in preparing the premium list, to make two classes of premiums in the first four classes of cattle; one for imported stock and their first increase, the other for animals reared in this country.

The Society took a recess, until 10 o'clock on Thursday, at the Society's rooms.

February 9th.

The Society met at the Agricultural Rooms, pursuant to adjournment; President Morris in the chair.

The awards of the Judges were read, and the Society took a recess till 7 P. M.

The Society met in the Assembly Chamber—7 P. M.—President Morris in the chair.

Reports were read, and the Secretary announced the award of premiums, for the exhibition of the winter meeting of 1854.—(The list will be found at the close of the volume.)

The president, Mr. Morris, then delivered the annual address. At its close he introduced to the Society William Kelly, the president elect, who made some very appropriate remarks, on assuming the duties of the office to which he had been elected.

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On motion of Hon. Henry Wager, of Oneida,

Resolved, That the thanks of the Society be given to the late president, for his faithful attention to the duties of his office, during the year, and also for his admirable address, and that a copy of the same be requested for publication.

Resolved, That the thanks of the Society be tendered to the other officers for their valuable and esteemed services.

Death of John Delafield, Ex-president of the Society.

On motion of Mr. E. Comstock, of Oneida,

Whereas, Divine Providence, in His inscrutable wisdom, has removed from among us a distinguished and valuable member of the Executive Board of this Society; and whereas the present is deemed a most appropriate occasion to express the deep sense of the loss which the Society has sustained; therefore,

Resolved, That in the death of John Delafield, one of the ex-presidents of this Society, and long a member of the Executive Board, the Society has sustained an irreparable loss, and has been deprived of the services of one to whom we have been accustomed to look for counsel and instruction; one in whose character were combined, in an unusual degree, the elements of usefulness, and the ability to carry into practical life the deductions of a sound and well balanced mind; whose virtues, whose integrity in public and private life, whose high moral and social qualities, and practical and methodical application of all his powers to the development of objects of public and general interest, but especially to the advancement of sciences connected with, and the practical improvement of the agriculture of the country, are worthy of approval and imitation.

Resolved, That, as the only remaining opportunity of testifying our respect for one to whose labors the Society is so largely indebted for its present position and prospects for future usefulness, the foregoing resolution be entered upon its records, and that the Secretary be requested to transmit a copy of the same to the family of the deceased.

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J. A. King, of Queens, seconded the resolutions, and made a most admirable address, alluding most feelingly to the death of Mr. Delafield, and gave a most appropriate tribute to his memory, and in relation to the valued services which he had rendered, not only to the Society, but to the farmers of New-York and the Union.

Mr. King being called upon to give some statements in regard to the New-York Agricultural College, made a very interesting statement of its present condition and of its importance. He was followed by Hon. A. B. Dickinson, of Steuben, with some very valuable and interesting statements in relation to fattening of animals, grasses for dairy and grazing purposes, and the manufacture of butter, which were listened to with deep interest.

Maj. M. R. Patrick, of Jefferson county, made some very valuable suggestions in favor of educating the sons of farmers, and the importance and necessity of an Agricultural Institution. He closed his remarks with a most feeling tribute to the memory of Mr. Delafield.

Mr. Cheever, from the committee on the subject of the experiments in the culture of the potato, presented his report.

Mr. H. G. White, of Erie, gave notice of the following amendment to the Constitution: strike out section two, and insert as follows:

"The officers of this Society shall consist of a Board of Managers, to be comprised of the Presidents of the different County Agricultural Societies in the State, ex-officio; or of one delegate to be from such county society, chosen for that purpose.

"The afore mentioned Board of Managers shall, annually, from their number elect a president, vice-president, treasurer, corresponding and recording secretary, who shall each perform the several duties appertaining to such office.

"The Board of Managers shall also annually designate ten of the members of such Board, who, together with the president, vice-president, treasurer, corresponding and recording secretary

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shall constitute the Executive Committee, upon whom shall devolve the duties now performed by the Executive Committee of the Society."

Also to strike out such other sections as may be incompatible with the section proposed.

And then the Society adjourned, to meet again according to the provisions of the Constitution.

B. P. JOHNSON,
Corresp. Secretary.

REPORT OF THE COMMITTEE ON PERMANENT LOCATIONS OF THE FAIRS OF THE SOCIETY.

Presented at the Annual Meeting, February 1854.

Mr. E. Comstock, from the committee appointed at the Annual Meeting of the Society, held in February, 1853, to whom was referred the question of locating the Annual Exhibitions of the Society, for a term of years,

RESPECTFULLY REPORTS:

That your committee received their appointment in pursuance of the following preamble and resolutions:

"Whereas the Annual Exhibitions of this Society have, for several years, been steadily and rapidly increasing, both in the display of articles for exhibition, and the attendance of farmers and others, induced by the interest which such an exhibition can not fail to excite in this great State: and

"Whereas the annual expense which must be incurred, in the preparation for a show of such magnitude and the attendance of so many thousands of persons, is becoming so large as to be onerous, whether borne by the Society or by the citizens of the town in which the exhibitions are held; and,

"Whereas it is believed by many members of the Society, and especially by the exhibitors at our Annual Fairs, that the conve-

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nience of the masses who attend the shows, and the safety and comfort of the animals, and the proper protection of the articles exhibited, require more permanent fixtures and more perfect arrangements than can be provided for a single exhibition, without a great sacrifice of time and money:

"*Resolved*, That a committee, to consist of one member from each judicial district in the State, be appointed by the Chair, to whom shall be referred the subject matter of the foregoing preamble, with instructions to report to the Society, at the next annual meeting, upon the propriety of a location, for a term of years, of the Annual Exhibition, and the erection of more permanent structures and fixtures therefor, or such other plan as they may deem beneficial."

Your committee having received notice of appointment, under the resolutions above recited, met at the Agricultural Rooms in this city, in May last, and organized by the appointment of one of their number as chairman. Resolutions were adopted, directing "that circulars be addressed to the County Societies in this State, and to such societies elsewhere as may be deemed expedient, asking for such information as the officers of such societies may be able to communicate, relative to the question of permanent location for agricultural exhibitions, and for any suggestions which they may choose to make, touching the question referred to this committee."

Also "that circulars be addressed to persons who have been exhibitors from the several counties in the State, at former exhibitions of this Society, asking their views in regard to the importance of more permanent buildings and fixtures for the several departments of the exhibition, in which they have been competitors."

Circulars were addressed to officers of Agricultural Societies in the State, whose address was known to your committee, and to several societies in other States and Canada. Your committee regret to state that but few replies were received to circulars of this kind, owing, as your committee have, in many instances, been

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told, to the fact that but a small number of the county societies have made the experiment and did not therefore feel qualified to speak officially on a subject of so much importance to the agricultural interests of the State. All the replies received by the committee from this source were favorable to a location; and some of the societies, at meetings of their Executive Boards, passed resolutions favorable to the measure. The secretary of the Board of Agriculture for Upper and Lower Canada, through its secretary, expressed a preference for the itinerating system.

A considerable number of responses to the circular, addressed to exhibitors, was received. With two exceptions they recommend some change in the present system, and agree, generally, in approving the plan of a location, either permanent or for a term of years. These communications, like those from official sources, abound in valuable suggestions and arguments, which have received the careful and candid consideration of your committee, and have been allowed their due influence in the conclusions at which they have arrived. They are the views and suggestions, in the main, of practical men, who have had much experience at the several successive exhibitions of the Society, and who have witnessed the effect of the present system, and although not entirely unanimous in their recommendations, the communications received, have presented the subject in all its bearings, clearly before the committee, and as they trust, enabled them to deliberate understandingly, and with a proper appreciation of the importance of the question submitted for their consideration.

Three leading and prominent points are urged in favor of the itinerating system, in holding our annual exhibitions: 1. The success which has attended it thus far. 2. The better accommodation of exhibitors and visitors by holding the show periodically in their several neighborhoods; and 3. The interest which is awakened among the citizens in every community, by bringing within their convenient reach, all the advantages which the Society through its annual exhibition is calculated to afford.

These are the most prominent of the arguments which have been urged in favor of the present system. To the first, the consideration to which precedent is entitled, your committee have

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been willing to yield a respectful hearing, and to allow its full weight in their deliberations. It is the argument used by some of the earliest and most valuable friends of the Society—gentlemen who have shared in its counsels, and contributed largely to its exhibitions, and who have been ever ready to aid in any measure which they believed likely to promote its success. Could your committee subscribe to the doctrine, that a system which was best adapted to the requirements and wants of a society in its infancy, and during the first few years of its existence, is therefore the only one which will be required to develope its objects, and give success to its plans for usefulness in mature years, they might yield a ready assent to the position under consideration. Strongly imbued, however, with the spirit of progress, and fully recognizing the doctrines of human advancement in all departments of business, your committee have failed to discover, in the former success and prosperity of the Society, a reason for confining its management to the same system, however excellent, which has thus far been pursued. They would rather, in the light of past experience, adhering with tenacity to all which seems worthy of perpetuation, and avoiding scrupulously all which is not adapted to its present exigencies, apply to it the enlightened practical tests which govern and control business men, in the management of their affairs.

The second and third arguments, above referred to, are entitled to respectful consideration, and will be examined in connection with the reasons urged by the friends of location, as we proceed with the subject.

The reasons in favor of locating permanently, or for a term o. years, may be classed as follows: 1. Economy of expenditure. 2. Convenience to exhibitors, safety of articles on exhibition, and increased inducements to farmers, mechanics, inventors and others, to place their articles on exhibition. 3. Facilities for prolonging the exhibition. 4. Increased comfort of visitors and extra inducements to attend. 5. Better facilities for preserving order. 6. Attendance and receipts.

Without wearying the patience of members of the Society, by an examination in detail of all the points which present them-

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selves under these several divisions, your committee will refer to some of the more important reasons by which they have been influenced, in reaching the conclusions with which they will close their report.

1. *Economy in Expenditure.*

The annual expenses of making provision for the fall exhibition of the Society have not been ascertained with any degree of accuracy, having been borne jointly by the Society and the citizens of the towns, where the Fairs have been held, but chiefly by the latter. The amount contributed by the several localities has, as your committee believe, ranged from $3,000 to $5,000, increasing from year to year, as the shows increased in magnitude, until it reached the maximum some two or three years ago, since which, it is believed, the amount has been confined within the last named sum. This large expenditure, it will be recollected, has been required for the provision of mere temporary accommodations of a very imperfect character, which were to be removed immediately after the close of the exhibition. They have included but a small portion of the buildings which would be required for the protection and safe keeping of the articles—tents having been extensively used as a substitute for buildings; nor has provision been made for the safe keeping of articles and the protection of stock, which is demanded by exhibitors. The complaint in this particular has become so general, that those familiar with the subject, have been impressed with the importance of adopting some system which should remedy the evil complained of.

The imperfect provision, in the way of buildings and fixtures, leads to a greater outlay for attendants, clerks, policemen and laborers, than would be required if more perfect arrangements and conveniences were at hand. With permanent fixtures, in a permanent locality, your committee are of the opinion that a large proportion of the force now required could be dispensed with, and that from the advantage of employing the same persons from year to year, and the benefits to be derived from their experience in the several departments in which their services would be required, the duties would be performed more correctly and more satisfactorily to all parties.

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From the data at their command, your committee are of the opinion that the expenses incurred in the preparation, in a temporary manner as heretofore practised, for two successive exhibitions, would be sufficient for the erection of permanent fences, buildings, offices, sheds, stables, and all the structures required for the accommodation of the Society.

It may be urged that since the expenses are, to a large extent, borne by the locality where the Fair is held, it is a matter of small moment what the amount expended may be. This may be true to some extent, so far as the funds of the Society are to be affected; but your committee do not believe sound economy allows any such distinction, or will admit of a required outlay of this character, unless it can be shown that it contributes to useful results. It is, moreover, unquestionably true, that the amount required to be expended by the Society, is also much larger than would be necessary with permanent structures, to be occupied for a succession of years.

2. *Convenience to Exhibitors, &c.*

The testimony of exhibitors is almost universal against the present system. The liability to injury, the danger of loss, and the exposure, in many ways, of the articles on exhibition, attendant upon the temporary arrangements, heretofore relied upon, are well calculated to discourage extensive competition, especially in articles of great value, or those of a delicate or perishable character. Arrangements which should afford security and confidence in this respect, would unquestionably have the effect to largely increase competition, and add materially to the interest and usefulness of the exhibition.

Serious complaints have also been made of the lack of accommodations for stock, and the exposed situations which animals of great value have been required to occupy, for days together, resulting always in injury, and sometimes in the total ruin of individual animals, which cost the owner large sums of money, and untold care and trouble; and whose value, in the improvement of the stock of the country, is a matter of great interest and importance. Your committee are informed that many breeders have, for the reasons above stated, felt constrained either to decline

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exhibiting altogether, or have been obliged to make a large annual expenditure, for the protection and comfort of the animals, while on exhibition. This evil would be remedied by arrangements of a permanent character.

3. *Facilities for prolonging the Exhibition.*

The temporary and insecure nature of the places heretofore provided for the Exhibition, and the large expenditure required for the protection and safe keeping of the property, have imposed upon the managers the necessity of confining the show to the shortest possible period, consistent with a decent examination, and always limited to two or three days. Manifest advantages would be derived both to the exhibitor and visitor, by extending the time of exhibition. The examination of the Judges would be more critical and minute, their reports prepared with greater care, and the reasons upon which their conclusions are based, presented at the time of making the awards. Visitors would come and go, and make their examinations, at their leisure; the immense crowd, for two or three days, would be avoided, while the number of visitors would be greatly increased, and the inducements to exhibit articles or animals of rare merit multiplied.

4. *Increased comforts of visitors, and extra inducements to attend.*

The benefits to be derived under this head, have been touched upon, incidentally, in the arguments already presented by the commitee. All who have attended our State Fairs, are familiar with the inconveniences and discomforts everywhere met with, even at places affording the best facilities, and almost intolerable when a small or out of the way place is selected for the show. A system which should afford a reasonable certainty that the exhibition would be held for several years, or in alternate years, in one place, would call out preparations for visitors and for exhibitors, and better accommodations would be obtained at reasonable rates. By extending the Show through a longer period of time, the crowd at no time would be so great as to be uncomfortable, nor would the town in which the Show might be held (if reasonably populous) be so thronged with visitors as to present any serious inconveniences. The public thoroughfares would be better able to convey visitors to and from the exhibition, and all

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parties would be gainers by the change. The benefits derived from these changes, would, it is believed, more than compensate for any difference in distance which would be traveled over in visiting the exhibition; and under the system which will be recommended by your committee, it is believed that all sections of the State would be better accommodated than they have heretofore been. And if the same degree of interest was not awakened in certain localities, which would result from holding the Show in their immediate vicinity, it is believed that a sufficient general interest would be aroused, to more than make up for the deficiency.

5. *Better facilities for preserving order.*

The preservation of good order and good police arrangements, is a matter of the first importance, at all times and in all places, but in none more so than on occasions of large gatherings of people, such as are presented by the Exhibitions of the Society. The more perfect the buildings, fixtures and arrangements for the Exhibition, the more perfect will be the order preserved. Every facility should be afforded for preventing disorder and crime, and it is believed that the change proposed would essentially contribute to this result.

6. *Attendance and receipts.*

The policy of the Society has ever been self-sustaining, and, with the exception of a small annual appropriation from the State, it has relied on its receipts for admittance and membership to defray current expenses, and pay premiums awarded. Viewed, therefore, in a financial aspect, the question of *attendance* and *receipts* is one of the first importance in determining upon a system of future management, and especially when, as in the present instance, any radical change is proposed.

Your committee have endeavored to show, that the expenses attending a system, embracing permanent buildings and fixtures, would be less than that upon which the Society has heretofore proceeded; and they have also attempted to prove, that such a system as now proposed, would afford greater inducements to exhibitors, and better accommodations and increased comforts to visitors; that it would also admit of an extended period of exhi-

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bition, and awaken a new interest among all classes who desire the promotion and advancement of our agricultural and mechanical interests. If these positions are correct, and your committee present them with much confidence, it follows that, *financially*, the change proposed would be beneficial to the Society.

In view of the reasons above stated, and others which can not well be embraced in the limits of this report, your committee have arrived, unanimously, at the conclusion, that all the interests which the Society is designed to embody and represent, will be advanced and promoted by such arrangement for its future exhibitions as will admit of permanent and convenient erections for its accommodation. While the chairman of the committee, more progressive it may be in his views, or less fearful of innovation, would not have hesitated to recommend a single permanent location, in some central part of the State, for the exhibitions; or, if the system of alternating from place to place is to be preserved, would have consented to the naming as many places as would agree to the conditions referred to below—the other members of the committee have instructed him to recommend to the Society to locate the Annual Fairs at two convenient and accessible points, Eastern and Western; and that the exhibitions be held, alternately, at each, provided the citizens of such places as may be satisfactory, will provide such permanent grounds, buildings and fixtures, as may be required by the Society.

All which is respectfully submitted,

ELON COMSTOCK, *Chairman*,
Rome, Oneida Co.

C. S. WAINWRIGHT,
Rhinebeck, Dutchess Co.

A. VAN BERGEN,
Coxsackie, Greene Co.

J. McDONALD,
Salem, Washington Co.

P. BARBER,
Homer, Cortland Co.

WILLIAM BUELL,
Rochester, Monroe Co.

T. B. ARDEN,
Beverly, Putnam Co.

H. T. BROOKS, Wyoming Co.

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ADDRESS

OF LEWIS G. MORRIS, PRESIDENT OF THE SOCIETY.

[Delivered at the Annual Meeting, February 9th, 1854.]

GENTLEMEN: The time has now arrived which closes my duties as the presiding officer of this Society. I shall always look upon it as the most prominent era of my life, and I only wish my ability as a public speaker would enable me to deliver such an address as the retiring officer of this Society should do; but, as it is the only public position I have ever filled, I must ask you to receive it as an agricultural document, without the finish of an address.

The Ruler of all destinies has seen fit, the past year, to throw the mantle of peace and plenty around us, and we, as a free and enlightened agricultural people, whose daily occupations furnish numberless illustrations of his great power and goodness, will, I hope, appreciate them in a proper and grateful manner.

The origin of our Society, and its progress from year to year, has been so fully and ably brought forward by my predecessors in office, and the reports which have been read by our worthy Secretary and Treasurer (as coming from our executive board) set forth so fully the details of the past year, and the agricultural community are so well versed in our Transactions, that it would be useless for me to attempt a description of our rapid strides of improvement.

The past year has been a successful one to our farmers, the crops abundant, and the prices of all kinds of productions—as a whole—never so remunerative. I think I may safely say, our

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farmers are making money, and growing rich, as much so in proportion to the capital invested, as the majority of persons following other occupations.

I could make a comparison between agriculture, as a profession, and many other occupations, which have heretofore been looked upon as more creditable to follow. Not that I would take anything from others, but give to agriculture, or the farmer, the credit due to the calling.

Let us first consider the good that one class of the community can do to others, by the occupation they follow. It will be admitted, without doubt, that the farmer stands first in this rank, as all the absolute necessaries of life come directly from under his hand.

The present age of improvement, as applied to agriculture, gives great field for study, skill and talent, and a man desiring occupation of the mind, can obtain it to almost any extent, and that, too, profitably, provided he will mix with that study a proper amount of actual labor, or superintendence, to see that that study is properly carried out. What, then, has he obtained? Why, occupation of the mind and body, and without these two united, health and happiness can not be obtained. What other profession combines these two to so great an extent?

It was an old common saying in a family, if one of the boys was not quite as bright and intelligent as the others, "We must make a farmer of him, as that is all he is good for." That was in the days when *book-farming* was hooted at. It was then thought that mental labor was useless; all that was required was to follow the old beaten track, and toil with the hands and body.

I am happy to say, that these views have passed away, and that the cultivation of the soil can accompany with it as pleasing and varied a study as any occupation in the world, and there is no end to the information to be gained. As to myself, gentlemen, I have just learned enough of the profession, to find out, that I know comparatively nothing.

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How often is it that a farmer embarks one of (as he thinks) his smartest sons in trade or speculation; it becomes necessary at the outset, or at some future period, to lend him his name on paper, or to encumber the farm; the result of which frequently turns out in being obliged to sell the landed estate, and the whole family brought to want by the proud or lazy spirit of this one son.

Let us therefore look at agriculture as it really is, as one of, if not *the* most respectable profession in the world. Let us instil these views in our sons as they advance in life, and if they have the least natural taste that way, and we can persuade them to take it as an occupation, let us do so, instead of launching them on the troubled tide of trade and speculation.

The life of a farmer, it is true, is not alone, as described by the poet, a life of quiet, ease and repose, contemplating in the distance fields of waving grain. It has its toils, early and late, in heat and cold; its risks, by unpropitious seasons, and numberless other obstacles to cope with, which often baffle all energy to bring out the result as anticipated; but by the aid of science, labor-saving implements and artificial manures, we are enabled to overcome these obstacles more successfully every year, and the positive profit may be looked for with much more certainty.

It is my belief that if the same amount of capital—say $20,000 each—should be placed in the possession of ten young men, all equally well versed in the professions they intend following, five of them taking agriculture, and the others various pursuits, that at the end of ten years, those engaged in agriculture (taking in consideration the rise in real estate), would on an average be worth more money, and have as respectable a stand in the community as the other five.

And while on the subject of instilling a proper spirit and education in youths to follow, and fit them for this occupation, I will allude to the Agricultural School and Experimental Farm, for which the consent of the Legislature was obtained last year, through the exertions and ability of the late John Delafield; he

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also nearly succeeded in getting it started by private subscription, and had he lived he would have tried the experiment in this country.

This is a proper and fitting place to again call your attention to the great loss we have sustained during the past year by his death, and to give credit for the numberless benefits he has conferred upon this Society.

The good results already produced—through our Society—by the premiums offered and other stimulating exertions, have led to vast improvement in the breeding of domestic animals, the growth of ordinary field crops, products of the dairy, variety and quality of fruits, application of artificial manures, construction and use of labor-saving implements, drainage, and the surveys of several of our counties, all of which have been fully and ably gone into, and the whole information generally diffused, as much so as the age of our Society could expect. But there are several subjects of vast interest which have been but little noticed, and to which I will call your attention, and advise that liberal premiums be offered for their promotion, and, if our funds will not admit at present, I would take it from such premiums as we have heretofore been advancing the interests of so liberally.

The first of these subjects is one which has been agitated in our executive board, the past year, under the head of grass seeds, for the promotion of the best and most nutritious pasture and hay for stock. We have obtained a variety of seeds from Europe; with the intention of getting experiments made in various sections of our State, on a scale large enough, and properly carried out for a term of years, so that a result could be got at in a tangible shape, and for further information I will refer you to the very able report of our late vice-president of the second district.

I would recommend more attention being paid to the quality of all seed sown and planted by our farmers. I mean that they should be raised expressly for seed, by persons who might make that kind of farming their principal object, and the ordinary farmers resort to them to procure their seed.

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The difference in value of a crop produced by seed properly selected, well matured and kept free from other varieties, would, in most cases, doubly repay the additional cost o procuring good seed, instead of sowing the kind they have on hand of their own growing. We have now many farmers in our State who are turning their attention that way, and if our large farmers will give them proper encouragement the good results will be reciprocal, and the average yield in our State greatly increased.

The next subject I will call your attention to is that of irrigation. While in Europe, in 1850, and again in 1852, I was forcibly struck with the great advantage of this fertilizer. There is many a brook or stream, running comparatively waste through a farm, that, if properly directed, would add as much to fertilizing the land of said farm as the ordinary stock kept upon it. If you will allow me to trespass on your time, I will give a short description of the three modes of irrigation I saw in practice.

In Devonshire, England, I saw what is called the "catch-meadow" system. The plan is this: A stream is dammed, and as large a pond formed at as high an elevation as the location will admit; that pond is tapped by a small ditch or race-way, at its bottom, to drain it; that ditch or race-way leads the water (keeping it at the highest elevation its head will admit), and allowing its banks to overflow and irrigate, as it meanders along, by which means a certain number of acres of the farm can be watered. This process is performed in the fall, winter and spring, as often as the pond will fill.

An experiment of this kind I witnessed in Exeter, at the Royal Agricultural meeting held in that place in 1850. Mr. George Turner, the celebrated agriculturist of that section, exhibited the process on his own farm, and while the water was flowing made very full and explanatory remarks as to its efficacy. Mr. Turner stated that he irrigated at any season of the year, excepting midsummer; he also said he did not use manure on the part irrigated, but would hurdle his sheep above the irrigated land where the water could not get; by which means he transferred the advan-

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tage of irrigation by the droppings of the animals which had consumed the pasture and hay, on the land below the water line. The only disadvantage, Mr. Turner stated by telling an anecdote of the celebrated breeder Bakewell.

Bakewell was so tenacious as to the exclusive breeding of superior animals himself, that he would not sell his old ewes to a breeder, and when it became necessary to part with them, he would fatten them on irrigated land, and then say to the butcher, "You may sell them to breeders if you please, as they never will produce increase hereafter."

This kind of pasture produces what is called the rot (a disease of the liver), and if the animal is not killed that fall it will die before spring. Mr. Turner stated that he was very careful never to graze his breeding flock on such pasture. Horned stock and other animals he expressed no opinion as to injurious effects.

The second mode of irrigation I saw on the plains of Lombardy (near the city of Milan), the great country for making Parmezan cheese, which is produced almost entirely from the grass and hay, as they very seldom feed anything else to their cows. The process of making this cheese is very simple, and performed by men in a very careless and anything but cleanly manner.

The cows are kept tied in the stables the year round, and only put out a few hours each day for water and exercise; they are rather better than an ordinary race of milkers, and are procured in Switzerland, at three years old, before they have produced their first calf; they are allowed to breed every year, and the young calves butchered, and when they get too old for the dairy they are killed, and their places again supplied from Switzerland. They possess a very decided appearance as a distinct breed, being, universally, some of them brown, and others mouse color, with a light or mealy tinge around the eyes and nose; very straight on the back; coarse in the bone, horns and hair. The agricultural establishment at Grignon prefers them to any breed of cattle.

The kind of irrigation used in Lombardy is by letting the water remain on the land, at a moderate depth, for a certain number of

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days; this country being so level, it is prepared thus: The water which descends from the snowy peaks of the Alps, rests itself in such beautiful lakes as Como and Maggiore, and after being quieted, tamed, and comparatively warmed, it winds its way in sluggish streams throughout those extensive plains. Previous to the channels of those streams being formed, and in great freshets, this whole country must have been irrigated naturally, which has caused one of the richest countries in the known world. At the present day, it is necessary to renovate that alluvial quality, and, to do which, a stream is dammed at the most suitable location, and a race-way is formed, frequently by raising an embankment; this race-way is tapped at pleasure and suffered to cover a certain amount of meadow, which is so graded and arranged, by ditches, that after the water has remained on it the proper length of time it is let off upon another meadow, so graded as to receive the water of the others, &c.

The person owning a location high enough to warrant a stream being dammed, sells the privilege of taking the water from it, for quite a large sum, and the next neighbor sells to his next neighbor, and so on. There are certain periods of time, and depth for the water to lay on the meadow, regulated by the heat of the weather; and a crop is taken from the meadow once in thirty days, as a growth from seven to nine inches long, as thick as the hair upon a dog. The climate is so mild, that eight or ten crops of this kind are taken per year, and, if the grass is not cut every thirty days during the season of growth, the roots of the sod is injured.

The third and last mode I saw, and by far the most beautiful, and in all respects better adapted for our general use, was in that picturesque country, Switzerland. This country is diversified by mountains, steep side-hills, slopes and flat lands, and when the water is finding its way down from those snowy peaks to the streams in the valley, its course is diverted by the peasantry, and obliged to flow over, and irrigate the side-hills, and at last finds its way into the streams below, after having performed its enriching duties.

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This process of irrigation is well understood in Switzerland, not only by the large farmers and small peasantry, but every women and child seems to understand the working and advantage of it.

When at Berne, I spent part of two days with Mr. Fellenberg the president of the Swiss Agricultural Society, and for whose kindness and hospitality I shall ever feel grateful. Mr. Fellenberg was the son of the late celebrated Fellenberg, the founder of Hofwyle (the celebrated institution which partly united with its studies Agriculture), and, while on the grounds at Hofwyle, I had pointed out to me a very complete system of drainage and the three different kinds of irrigation. This institution ceased, on, or shortly after the death of its founder, and the whole estate was for sale, it being the private property of the Fellenberg family.

Mr. Fellenberg offered, if I desired, to send me a man to this country, who was a scientific irrigator and drainer, and I believe it would pay a few of us well, as individuals, to import a man of that kind. He could take a gang of hands, prepare one farm, and then go to another, only moving himself, as the work can be performed by the common Irish laborer, if it is properly laid out and superintended.

The waters considered to have the most benefical effects for irrigation, are, such as the speckled trout frequent, and the water-cress grows in luxuriantly; and it is my belief that we have not a cultivated county in our State, or a cultivated state in our Union, the productiveness of which could not be increased one-fifth by irrigation, and that, too, at a comparatively small cost.

Having drawn a very favorable position for agriculture, as an occupation, it is well I should give credit where credit is due. It is mainly owing to the establishment of such societies as this, all over our Union, and by the aid of the agricultural press, which have become very numerous and of a very high order as to ability, by which means a regular fund of information is diffused, not only of the proceedings of this country, but the accounts and doings of European agriculturists, by which means it affords our

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American aptitude a chance to apply the experience of the old world, for centuries, and our inventive genius as a nation has led to many improvements which are better adapted to our soil and climate.

It is by comparison with others, that we judge of our own, and without the society meetings to be able to draw the comparison, and without the editors to give us the information as to the doings of the agricultural world, we would have been an eighth of a century behind. I therefore hope we will continue to give the press increased support, and keep our agricultural institutions foremost in the minds of the people.

And now, gentlemen, on retiring from my duties, allow me to express my heart-felt gratitude and obligation to the Executive Committee, and other business officers with whom I have been associated the past year, for the kind and courteous manner by which they have turned what otherwise might have been thought labor into pleasure, and it is my most sincere wish and belief, that, our onward course is still to be improvement.

My only remaining duty, is, now, to present to you our president elect, Mr. William Kelly, of Dutchess county.

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ADDRESS

OF WILLIAM KELLY, OF DUTCHESS COUNTY, BEFORE THE NEW-YORK STATE AGRICULTURAL SOCIETY, UPON TAKING THE CHAIR AS PRESIDENT, FEBRUARY 9, 1854.

In assuming the duties of the office to which by your favor I have been called, permit me to express my thanks for the honor conferred, and my gratitude for the confidence you have thus shown in me.

If I had been governed solely by my own views, as to my fitness for this important station, I should have hesitated to accept the honor you have bestowed. I remember that this chair has in past years been filled by men who stand among the foremost for intelligence, for skill and experience in agricultural pursuits; and I may well doubt my ability worthily to succeed them. I can but promise you my best exertions, and assure you that, whilst I yield to my predecessors, in talent and experience, I claim to be equally zealous with them in the great cause of agriculture—a cause which we all have so much at heart.

And I ask from you a hearty coöperation. You have appointed an executive committee of ability, who will, I doubt not, prove to be efficient laborers in the work; but we need something more than this, to ensure the highest, the proper degree of success. Every member of this society should feel that he is identified with it; he should resolve to do what he can to make its exhibitions attractive, and to awaken a renewed interest towards it in the minds of his neighbor farmers.

Shall I say it? I have sometimes been disposed to be jealous of our county societies; not that I would do aught but bid them "God speed" in their good work, and rejoice in their success; but many of them have become so flourishing and important as

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to well nigh absorb the sympathies of the farmers in those counties, and thus lessen, if not destroy, their interest in the State society.

Let me say to such, the parent society can not spare you. You are the men on whom we rely, to sustain it, and make it more useful than it has ever yet been. You have been among its earliest, firmest friends; do not suffer your interest in it to die out. The State society and the county societies belong to a system: both are necessary; both have their appropriate orbits, and they may and ought to move in harmony, each a benefit to the other. We do not ask you to love your county society less, but to love your State society more.

Remember, we all, as farmers, owe to this society a debt of gratitude. It has been the pioneer in elevating and improving agriculture. It has served as a model for most of our State societies and a pattern for those of Europe; for, young as we are, there are many things in which they copy us. Let us, then, cherish it; unite cordially in its support, with zeal and energy; and thus continue it, what it has been, a means of great usefulness, and a just source of pride to the farmers of the State of New-York.

Gentlemen, again I thank you for the honorable trust bestowed on me.

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REPORT OF THE COMMITTEE ON FARM MANAGEMENT AND THE PLANS FOR A BARN.

In discharge of the duty imposed upon us by the Society, we would respectfully report, that but one applicant has favored us with a statement of "Farm Management," and consequently the only question left for us to decide, was how far that statement answered the purpose to be accomplished by the liberal premiums offered by the Society. Judging from the character of the questions propounded by the Society, to applicants for these premiums, we are induced to believe, that the encouragement of more system and method in the operations of the farm, rather than the impertinent prying into the private business and domestic history of successful farmers, is the principal object to be attained by these awards; while it is at the same time enabled to lay before the public the valuable information derived from the experience of practical men. And as you will have an opportunity equally with ourselves, to judge of the character of the statement offered, we deem it only necessary to say, that, though it has many merits deserving encouragement, yet it hardly comes up to that high standard of merit, for which the Society ought to be required to bestow its highest premiums, especially as many of the most important questions proposed, have received no satisfactory solution in the report. We consider the third premium, $20, as fully equal to the merits of the statement, and therefore award the same to Sluman L. Wattles, Esq., of Sidney Center, Delaware Co.

Barns.

In determining upon the merits of the plans for barns, the committee have endeavored to be governed in making their decision, by the considerations of economy and convenience of the buildings, and their applicability to the wants and necessities of the great body of the agriculturists of the State. Many difficulties and embarrassments have been encountered in deciding upon the respective merits of the plans presented, as the diversity of employment in the various sections of our great commonwealth, can hardly be supposed to admit of any one plan adapted to the requirements of all our farmers.

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The one which seemed best calculated to answer all the ends proposed and capable of being enlarged or reduced to the requirement of the larger number of farms, was presented by Mr. L. F. Allen, of Erie Co.

The committee exceedingly regret, that but one premium was offered, as, in consequence of that, the public can avail themselves of but one of the plans, while the others which have merits peculiar to themselves, might be found far preferable by many persons for whose necessities and circumstances the one accepted does not seem as adequately to provide. There were four plans submitted, each of which had its peculiar claims to favor, and each of which, were they before the public, would doubtless find its advocates; but in neither do we discover the application of any new principle, which has not already been adopted in many of the well devised barns throughout the country. How far economy of building and convenience of the farmer will be promoted by the plan adopted, all may judge for themselves, as the plan and the claims it has to their favor are ably and efficiently urged by the specifications and statement accompanying it.

Whether a more economical shape than a rectangular structure might not be adopted, and one which would equally well suit the requirements of all buildings erected upon the farm, is a question well worthy the consideration of the tasty and ingenious architect, whose province it is to design these important sources of convenience and comfort for both man and beast.

In this age of progression we can hardly afford to acknowledge, that there is no improvement to be made over the old established systems, which all acknowledge are full of imperfections, and hoping that the liberal premium offered by the Society, may yet bring out some plan infinitely superior to any thing yet devised, we sincerely urge this subject upon the attention of all who can appreciate the necessity of improving upon the present defective systems of rural architecture.

SAM. T. TABER,
JOHN WINSLOW,
W. IVES,
Committee.

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Description of Sluman L. Wattles' farm; Sidney Centre, Delaware County. Third premium.

1. My farm lies in the town of Sidney, Delaware County, on the highland, between the Susquehannah rivers, and consists of about seventy-eight acres of land; seventeen of which are woodland, three acres waste, and fifty-eight acres are under improvement.

2. The soil is gravelly and stony, excepting about fifteen acres of flat, through which a small creek runs, which is loamy. The composition of the subsoil seems generally to be similar to the surface, several feet in depth. I have no large rocks, and no limestone is found in this section.

3. My farm being adapted to dairying, I plow but little, but I plow deep, pulverize, harrow thoroughly, and manure heavily all that I do plow. My meadow lands are improved by top dressings of manure, applied in the fall, and by plaster sowed in the spring. I also sow plaster on my pastures, and carefully spread the dropping of the cattle early in the spring.

4 and 5. I plow from 6 to 8 inches deep. I have made no experiments in regard to deep and shallow plowing.

6. I have never used a subsoil plow.

7. The most common trees are maple and beech; there are some hemlock, pine and birch; a few baswood, cherry, ironwood, elm and ash trees. Of indigenous plants I have the blackberry, red and black raspberry, strawberry, gooseberry, burdock, common thistle, white and yellow daisy, catmut, elder, helebore.

MANURES.

8. Manure is applied to corn ground at the rate of 30 to 40 loads per acre; my manure is nearly all made in the stables and hog pen. I have no cellar under my barn.

9. My manure is made from my cattle and hogs; I keep a sufficient number to consume nearly all the hay, grain and straw grown on the farm; it is all applied; I cannot state the number of loads this year.

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10. I prefer to have manure applied in a green state to all tillage crops, corn especially. For a topdressing to meadows it may perhaps be better rotted as it is finer; I think there is nothing gained by keeping stable manure a long time.

11 and 12. I have used no lime, guano or salt. I use plaster, and think it indispensable.

TILLAGE.

13. The number of acres under the plow is only six and one half, viz: two acres of corn, four acres of oats, and one half acre of potatoes.

14. The soil and climate of this region are considered unfavorable to the production of corn. I planted an early variety of 8 rowed corn with large kernels and small cob; from two acres I harvested 200 bushel baskets of ears of corn; I also gathered from the same 2,200 pumpkins. The corn was planted about the 20th of May, hoed twice, and cut up by the roots in September; my oats are not yet thrashed; I harvested 1,400 sheaves. I generally sow 3 bushels of seed on an acre for oats; I planted my potatoes on dry ground very early and without any manure; I had on the half acre 70 bushels of potatoes of good size and but little affected with disease.

15. For corn I apply green manure and plow it under; I do not apply manure directly to oats, as it makes them grow too rank and lodge; I generally sow oats after corn and potatoes; potatoe ground should not be manured.

16. I cover manure as deep as the ground is plowed.

17. This season my potatoes are somewhat affected with the rot; I have not discovered the cause; the best way to prevent the disease is to plant very early, on dry ground, moderately rich, to dig them early, and store them in dry places.

GRASS LANDS.

18. I seed generally with timothy, at the rate of 10 to 12 quarts of seed, per acre; I sow in the spring on oat ground, and cover

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the seed with a light bush, white clover springs up spontaneously and I consider it the best grass for pasture for milch cows. A mixture of timothy, white clover and red top make the best hay for cows.

19. I mow about fifteen acres, the average product of which is two tons an acre. I prefer early cut hay, and endeavor to cut my grass as near as possible, when it is in full bloom.

20. I have a few acres of meadow, which have been mowed some forty years in succession, and, as I am informed, have never been plowed. The land is kept in a highly productive state by the occasional overflowing of a small creek, which runs through it, and by the wash of a road running on the upper side of it.

21. I have practiced irrigation no more than to save the wash of the roads and side hills, which I do by plowing ditches and turning the water occasionally with a hoe where it is most needed. In this hilly region a vast amount of water runs into the vallies, during heavy rains, and in the spring when the snow melts, which, with little labor, may be made to spread over and fertilize a good deal of ground.

22. The white daisy is considered the most troublesome weed in this section; I have but few of them; they flourish most on poor worn-out land; the best way to destroy them, is to make the ground rich, and the grass will crowd them out.

Domestic Animals.

24. This year I have milked eight cows through the season, and one I milked from the first day of June till the first day of November. I have also milked three heifers, three years old, and two heifers, two years old—fourteen in all. Allowing the five heifers to be equal to three cows, which is the common estimate, and which, according to my experience, is high enough, I have milked the same nearly as twelve cows. I have made this season from my cows, as above described, twenty-eight hundred and sixty-nine pounds of butter, as weighed when sold; besides the butter, cream and milk used in my family, one year, which I esti-

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mate the same as two hundred and fifty pounds of butter, amounting to nearly two hundred and sixty pounds of butter, per cow. Besides my cows I have kept this season one two years old, and two yearlings, and one horse, and raised five calves.

25. I have made no experiments to test the relative value of the different breeds of cattle, but for dairy purposes I am satisfied with a selection from the common or native breed.

26. Cattle should be wintered in stables; each one should have a separate stall, and should be kept up nights and stormy weather; I have but little straw to feed; none except oat-straw. I thrash it with a flail, (taking care not to thrash it too much) and feed it to the cows in their feed as fast as it is thrashed, so that there is nothing wasted; nearly everything that comes into my barn goes out through the stables; I never feed cattle on the ground, considering it a great waste. During the winter my cows have plenty of hay, and in the spring the cows have meal.

27. From my nine cows and five heifers, as before stated, I have made and sold this season twenty-eight hundred and sixty-nine pounds of butter; I usually make over two hundred pounds per cow in a season; my butter is made in the common way; the milk is strained in pans, very shallow, in warm weather, and, after standing 36 or 48 hours, it is skimmed and the cream is churned; after the butter comes it is washed in cold water and salted at the rate of one ounce to the pound; it then stands in a cool place until the next day, when it is worked and packed in firkins.

28. No sheep are kept on the farm.

30. I fatted this year five hogs of the common breed; I fat them almost entirely on sour milk; two of them were killed at 14 months of age and averaged 150 pounds each; three of them were fifteen months old and weighed, when dressed, 300 pound, on an average.

31. I have made no experiments in regard to the relative value of roots and Indian corn.

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Fruit Trees.

32. I have about one hundred apple trees, most of which are grafted, and of the most approved varieties.

33. I have a few pear, plum and cherry trees, all of my own planting; there were none on the place when I bought it.

34. The common caterpillar attacks my apple trees; they are easily destroyed.

35. I plow the ground, and manure when practicable; when not, I dig around the roots of the trees with spade.

Fences and Buildings.

37. My barn is 30 feet by 62, with two floors across and stalls in each end, sufficient for all my cattle; my horse stable is 13 feet by 20 feet with stalls; hog pen 12 feet by 16 feet; with a corn house over head and yard back; my wood house is 12 feet by 20 feet; my house is 24 feet by 26 feet, with a wing 16 feet by 32 feet, with verandahs on both sides, each 32 feet in length; my cellar extends under the whole house and is divided in two apartments, one of which is 24 feet by 26 feet, the other is 12 feet by 30 feet.

38. All new fences are made of stone. I have considerable rail fence and some post and board fence around the buildings; stone wall costs about 75 cts. per rod. I have made no wire fence.

39. I measure all my grain and potatoes and weigh most other produce, excepting hay; and daily and correct accounts of the weight or measure of everything raised are kept.

40. I keep regular farm accounts, and can state the annual expense of improving my farm for several years back, also the income from it.

41. The following is the account of the receipts from actual sales of the produce of my farm, and labor this year. There is nothing included in it which has been used or consumed on the farm:

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627 lbs. butter, sold at home in the spring, at 18¾ cts.	$117 55
2242 lbs. do do fall. at 21 cts.	470 82
700 lbs. pork, at 6 cts.,	42 00
1 old cow,	14 00
1 yearling bull,	9 50
3 calves, at $3.00,	9 00
1 heifer, 2 years old,	20 00
Deacon skins,	3 60
Eggs,	6 85
1½ barrels soap,	5 25
Grain,	20 00
Sundries,	9 83
Received for my labor and services rendered the town and county as supervisor, &c.,	73 54
Amount,	$801 94

The amount of money paid out in carrying on the farming operations this year, and for all family necessaries, excepting dry goods, is as follows:

Paid for groceries,	$32 62
salt,	6 80
flour,	20 32
firkins,	20 63
blacksmithing,	5 58
plow points,	1 13
pigs,	4 50
plaster,	2 50
4 months work, at $15.00,	60 00
14 days work haying,	14 00
chopping,	3 38
harvesting corn,	4 00
butchering,	0 75
taxes,	6 08
sundries,	3 82
Amount,	$186 11

Amount of profit $615.83, or $10.63, per acre.

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It may be proper to state, that I have owned the farm seven years, and that I bought it for fifteen hundred dollars; that, being more than five miles from any village and nearly one hundred miles from the nearest city, I have not the advantages of a ready market. That, having no family, except myself and wife, and a girl thirteen years of age, who lives with us for her keeping, I have no help, except what I hire; that I have made this year thirty rods of new stone wall; and that my stock of cattle, now on hand, is full as good as it was a year ago.

SLUMAN L. WATTLES.

SIDNEY CENTRE, *December* 30, 1853.

Delaware County, ss:—Sluman L. Wattles, being duly sworn, says, the facts set forth in the foregoing statement by him subscribed, are true, according to the best of his knowledge and belief.

SLUMAN L. WATTLES.

Sworn before me, this 29th day of December, 1853,

ROBERT S. HUGHSTON, *Justice of the Peace.*

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PLAN OF BARN BUILDINGS,

BY LEWIS F. ALLEN, BLACK ROCK.

(Premium of $20 awarded.)

To the Executive Committee of the New-York State Agricultural Society:

I present you a plan of barn and stabling, with explanatory drawings, in requirement with your premium list, inviting plans of this kind for your annual meeting in February 1854. The buildings presented are the plans of structures now in course of erection on my own farm on Grand-Island, in the county of Erie. I do not present them as *new* and untried in merit, therefore theoretical and speculative merely, but as the *reconstruction*, on an enlarged and more durable plan, of a barn establishment, first built by me twenty years ago, and which I have used ever since, for both grain and stock purposes, in all their variety and branches. My experience in their use, together with a very considerable observation of buildings of like character in different parts of the country, has confirmed me in the belief that I can not suggest so good a plan and arrangement as this now presented to you. I therefore offer them to the consideration of your committee, for such judgment as in their opinion their merits may be entitled.

LEWIS F. ALLEN.

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DESCRIPTION.

The body of the main barn is 100 feet long by 50 feet wide; the posts 18 feet high, above the sill, and 12½ feet apart, making nine bents. The roof has a pitch of 17 feet, being a trifle over what would be termed a third pitch. The advantages of a steep roof over a flat one, in durability and affording storage beneath it, will not, by experienced men, be questioned. The beams of the barn are 14 feet above the sills, which is the height of the inner posts. It is not necessary, however, to have more than two of these beams, aside from those at the ends, extend across the whole width of the building, as a beam inserted across the entire width at the fourth post from each end, thus leaving a space of 37½ feet at each end and of 25 feet in the middle section without beams, will tie the building sufficiently strong to prevent spreading, and interfere less with the storage of hay and grain over the main floor. The perloin posts are 12½ feet long, and stand 12½ feet inside the main outer posts. These perloin posts are connected by girts 25 feet long, 3 feet below the perloin plate. The lower rafters are one foot longer than the upper ones, allowing that measure for projection over the main plates; the upper and lower rafters thus being 15 and 16 feet long, respectively.

The barn is divided, lengthwise, into three sections, viz: the main floor in the center, extending throughout, and a section on each side, accommodating the hay and grain bays, horse power and machinery. This floor is fourteen feet wide; it may be contracted to twelve feet, for hay purposes only; but for the uses required in grain storage, fourteen feet is none too much. On each side of the floor, at the front end of the building, is an open area, 25 feet in length, extending to the sides, or outer posts, 18 feet. On one side is located the thrashing machine, corn sheller, grain crusher, straw cutter, and such other machinery, driven by horse power, as may be required; and on the other side is the circular track for the stationary horse power, where the horse walks round the circle like an old fashioned bark-mill. Such an arrangement for *stationary* power I believe to be better, in its simplicity, cheapness and convenience, than any other yet invented. In this arrangement, a perpendicular shaft, with arms, at the extremities of

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which the horses are attached, is the moving power. A cog-wheel is placed near the upper end of the shaft, over the horses, with segments of iron cogs on its upper side, which play into the cogs of a small wheel or pinion, on a line of shaft which runs across the main floor and through the opposite area. On this line of shaft are placed drums or pullies, of suitable size to carry the various machinery which may be attached. Next to the end of the barn, at the entrance front, is a passage on either side, four feet wide, leading to the stables, hereafter described. The horse power and track occupies 18 feet beyond, on its own side; and next to that, beyond, is a flight of stairs leading up to the granary and store room, which extends over the horse track and passage before described, and eight feet above the floor, being 22 by 18 feet, and as high as the demand for storage may require, if up to the plate: or, this granary or store room may be dispensed with, and the room occupied for hay or grain in sheaf storage purposes, like that over the machinery, on the opposite side. In such case, the stairs will not be necessary, and the room occupied by them may go into the bay. The balance of the room on each side of the floor is devoted to bays for hay and grain, being 18 feet wide, and extending 71 feet, to within four feet of the further end, which is reserved on each side for a passage to the stables. These passages should be eight feet high, and over them the hay or grain may be extended from the main bays. On each side the main floor, and ten feet above it, from post to post, should be extended and framed in, a line of girts, on which, when the bays are filled, poles may be laid over and across the floor, resting upon the girts, and on the poles loose boards or slabs, by way of scaffold, to receive other hay and grain which the bays will not hold. In this manner, taken in, in sections over the floor, the forage may be piled to the peak of the roof, thus holding quite as much as one of the bays. Stored in this manner, the barn will hold over 100 tons of hay, after deducting the large areas for the granary, horse power and machinery. The inner posts and beams are marked in the elevation of the plan, so as to be seen.

In the plan submitted, the barn stands 4 feet above the ground. The purpose of this is two fold: if the underground room is wanted

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for stabling stock of any kind, an excavation of three to four feet will give ample room for that purpose, and permit the stables to be light and dry—two indispensable requisites for the health and proper keeping of stock. If not required for stabling, the bays can drop near to the ground, thus giving a large additional quantity of storage for hay: or, if preferred, the earth may be excavated to a sufficient depth beneath the proposed space to accommodate it, and the horse power be stationed below; thus saving for storage the room occupied by it on the main floor. In such disposition of it, however, a driver would be necessary with the horses below, as they would be out of sight of the men at work above; whereas, in ordinary labor, with but a single horse, or two, at work, a driver for such work alone would not be necessary. Another object in placing the floor of the barn so high is, that the stables which are attached to it may have storage lofts over the cattle, with a sufficient slope of roof. Still, the barn may be set within two feet of the ground, and the stables be as they now are, in height of posts and storage room, if the barn posts be carried up three feet higher—21 feet instead of 18; or, the outside stable posts may be shortened, so as to give sufficient pitch to the roof; but this will cut short the loft room over them. A consideration of all these will commend itself to the circumstances of the farm and its proprietor.

On each side, adjoining the barn, is a line of stables, 16 feet wide, dropping three feet below the sills of the barn, and standing one foot above the ground. The posts of the stables are 12 feet high; the roof has a quarter or eight feet pitch. One foot below the plates of the barn, and parallel with them, a girt is framed from post to post, its whole length, as a support for the upper ends of the stable rafters. These rafters are 20 feet long, leaving 2 feet to project over the sides, and carry the water entirely away from the sills. The beams which connect the outer posts of the stables with those of the barn, and tie the buildings snugly together, are 7½ feet above the floor. For the purpose of further security, every rafter should be spiked at its foot on to the stable plate, and at its head, into the girt on which it rests, between the main posts of the barn, that there may be no spreading apart. The beams over

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the stables are floored to receive hay, straw, corn-stalks or litter for the cattle, of which the lofts will hold a large amount, and hay doors should be made in every second bent, under the roof, outside, to receive it from the carts or wagons.

The floor plan of the stables, by reference to the drawings, will be readily understood. A passage way extends the whole length next to the barn, four feet in width. A short flight of steps accommodates the descent from the passages at the ends of the barn to those in the stables. This is tightly floored over, and receives the hay from the adjoining bays and loft. Next to this is the line of mangers, two feet wide, into which, from the passage beside them, is thrown the hay. The space beyond is divided into double stalls, from 6 to 7 feet wide, and of course will contain more or less of them, according to their width, which will be determined somewhat by the size and kind of cattle kept in them. In the middle of every bent in the stables, which will of course be 12½ feet apart, except in that bent where is a door, is inserted a dung window, 18 inches long and 15 inches high, closed by a sliding shutter inside. These stables have each two doors, one at the front end and one as above named, in the center bent on the sides. These doors are fonr feet wide and run up 7½ feet, to the level of the girt supporting the floor above.

The stalls are partitioned from the passage or alley way before described, back 7 feet, with two inch plank or inch boards if double, and 5 feet high, to prevent the cattle interfering with each other. These stalls are framed by laying two light sticks of timber, say six inches square, parallel, the whole length of the stables, upon the beams connecting the stables and barn posts together. One of these parallel sticks is exactly over the side of the manger next the alley; the other seven feet from it, into the stable. Either pin or spike these pieces strongly on to the beams. Then frame small posts, say 3 by 6 inches, (the thin sides in the partitions,) from the floor, perpendicularly, into them; and on to these posts nail the partition planks. These posts and planks should be sound, strong wood, as the heaving, and rubbing and wrenching upon them by the cattle, will be severe. The bottom of the mangers should be about 18 inches above the floor, for cattle, and 2½ feet

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for horses. They may be either perpendicular in the sides or flaring towards the top next the animal; this last is the better way. Bottom supports and side cleats should be well spiked on to the sides of the partition planks to hold them. Planks 18 inches high in front, and 2 feet next the alley, will be high enough to enclose the forage for the cattle. On the alley side a continuous line of one inch boards, nailed on to the partition posts for the stalls, will enclose that side of the mangers, and be stout enough, while 1½ or 2 inch planks should be used next the cattle. A partition between the mangers should be made, so that each should have its own separate allowance, where the cattle stand together. This should be of stout plank also, and as high as the front plank. The partitions of the stalls of course keep the other sides of the mangers separate. The center of the plank of the manger next the cattle should be slightly cut out, like a new moon, to let the neck of the animal down while feeding. On each side of the stall, next the manger, a staple and ring should be inserted, into which to secure the rope or chain which holds the animal. By this course, the two cattle standing in the same stall are kept as much apart, so far as interfering with each other's food and goring is concerned, as if in separate stalls, while they occupy less room, are more comfortable and warmer in winter than if each had a stall by itself. If upright stanchions, which shut in on each side of the neck are used, this will vary the manger arrangement altogether; but as I disapprove that plan, I shall not further allude to it. Now, to prevent the cattle climbing their feet into the mangers, which they are very apt to do, spike a piece of scantling or a flatted pole over the top of the partitions, lengthwise, and perpendicularly over the front of the manger, and the mangers are complete. A passage of three feet at each end of the stable, for access from the like passage in the barn, is necessary, and the outside of the outer stall should be set that distance within. The comfort and cleanliness of the cattle will be enhanced by sinking the floor two inches, seven feet back from the mangers, so as to allow the *stale* to pass off, and the dung to drop below the floor they occupy; and this accomplished, the stable is finished.

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The adjoining sheds, attached by a section to the rear of the barn, will be readily understood. A leanto, like the stables just described, and on the same floor-level, is attached to the rear end of the barn, and extends indefinitely, according to the wants of the proprietor. I have made these extensions, on the ground plan submitted, 64 feet between the barn stables and the outer corner section. This leanto, next the barn, has a passage of 14 feet wide, from the main floor through it, *declining* three feet in the 16 feet width—a sharp inclination to be sure, but down which an empty cart or wagon can be managed with an ordinary horse or ox-team, by cleeting the floor with strips of plank. A double door, corresponding with the main doors at the other end of the barn, is hung at the outer side. On each side of this floor-way is a room 34 by 16 feet. It may be divided into separate rooms, or mangered off into stables, as required, and the passages at the ends of the bays of the main barn and stables will accommodate the passage of their food to the animals within them. One of these rooms may be used as a calf house, always a necessary appendage to a stock barn; the other may be fitted up as a hospital, another important adjunct. A cow about to calve, or a sick animal, can always be accommodated in this; and for such purposes, a room apart from other cattle is really necessary, and pays well for its construction. On a line with this leanto extend, each side, a shed of the same dimensions in height, and width 64 feet; thence turning at right angles, extends 116 feet, to the front line of the barn. This is put up in six bents, of 16 feet each, and two of 10 feet each, forming the stables at the front ends. The sides next the barn are open for eight feet above the ground; the remaining 12 feet being boarded, and enclosing hay or straw lofts, with hay doors in every other bent. A room, 16 feet square, is made in each corner, (two of them,) which can be used for housing weak ewes, lambs, a bull stable, or any purpose required. The stables at each end will be convenient for teams of horses or oxen, or, they may be used for wagon houses, tool houses, or other objects. Racks or mangers may be fitted up in those open sheds for feeding sheep or young cattle, and yards may be built adjoining, on the rear, six or eight in number, into which they may run, and be kept separate. Indeed, I can not devise any better mode of

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keeping sheep than this. They may all come into the sheds to eat. Barred partitions may separate the different flocks. Bars may also enclose the opening in front, or they may, by tight boarding, be shut in altogether.

Eave troughs and conductors should take the water from the roofs into cisterns, for the cattle. By underground pipes these cisterns can all be connected, if necesary, and the water of them all drawn from one alone, by a power pump. By thus collecting the water from the roofs, the yards will be kept dry, and a large quantity of water be constantly stored for the stock in all weathers. It may be objected that *shed*, or one-sided roofs are given to the outer sheds attached to the barn instead of the common double-sided roof, which may be a trifle less expensive. The object of the one-sided roof is to throw the water falling upon them *out*-side, instead of *in*-side the yards, thus keeping them drier and cleaner.

OBSERVATIONS.

Now, with the continued experience of twenty years, and a large stock of cattle, horses and sheep, for the greater share of that time under my own immediate charge, and with a knowledge of the every day wants of a mixed stock, I can not conceive of a plan affording more conveniences at so cheap a cost. For a stock breeding farm, a milk, butter or cheese dairy, for stall feeding cattle this arrangement is equally convenient. Cows should be tied up to milk? these stables are just fitted for it. They want extra and separate feeding? these mangers will accommodate it. Bullocks are to be stall fed? here are stalls, and ample preparation, and storage for all manner of food required. Is a sheep barn wanted? here is abundant storage for their fodder, and the sheds, which may be extended indefinitely, are at hand to house and protect them perfectly. If grain be the object of the farmer, and little stock is kept, the main barn is the thing for it, and the sheds can be left off.

A great merit I consider this plan to have over others is, that it contains a *fixed principle* of construction for a barn of any size, larger or smaller. It may be built on a small scale, or it may be much larger than the one submitted. I can see no important ob-

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jection to so extensive a range of building in connexion, except that of fire. In case any part of it should burn, the whole would probably be destroyed. Few clusters of farm buildings, indeed, are otherwise, and I know of no way to remedy this objection but to *insure*; and no man not able to lose his buildings without inconvenience, should neglect insurance. Besides this, the saving in labor and forage, with such a barn as this, will twice pay the insurance every year.

The economy of labor in feeding stock in this barn will be seen, in the immediate proximity of the forage to the mangers. The long passage down the two sides and at the end, between the main barn and the stables, is used to throw the hay into from the bays, and then it can be forked over at once into the mangers. Girts are to be framed into the barn posts next the alley to keep the hay in place as it is mowed in from the fields. When the bays are full up to the eaves, a well hole is to be cut with the hay knife, from the top, outside, next to the stables, and longitudinally near the center of the bay, far enough down to push the hay into the alley for feeding. This hole is of course to be enlarged as the hay is fed out, and in a little time the whole side will be open. For cutting feed, the area adjoining the main floor, where the cutting box stands, is convenient to the bays on either side. The granary, over the horse power, will hold all the *ground* feed for mixing with the cut forage.

The lofts over the sheds will hold a large quantity of forage for the cattle or sheep, which may be fed and sheltered there; and as forage of every kind is enough better, when sheltered from the weather, to pay for such shelter, it should always be stored; and then, in all weathers, the cattle or sheep, dry and comfortable, can eat at their leisure. Step-ladders can be built at convenient places under the sheds to ascend into the lofts..

It may be objected to putting the stables on to the *side* of the barn, when so frequent a plan is to have them in the body of it, under the bays. The objection to this latter mode is, that the *stale* of the cattle soon rots the sills, and exposes the whole structure to infirmity, whereas, if the stable sills decay, they may be

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readily replaced, at less expense than the others. Besides this, the convenience of low storage in the bays is great, in the saving of labor, over that of pitching every thing so high over head. To this may be added, the whole concern is much warmer, contradicting, in this case at least, the old adage, "as cold as a barn;" and still, perfect ventilation is given through the long ranges of alley all round, and the stable windows.

PROTECTION AND PRESERVATION OF MANURE.

Believing that the best application of barn yard manure on the farm is to get it on to the fields where it is required, with the least possible delay after dropped from the cattle, I should require but little shelter for it at the yard. But as both theory and practice differ in this regard, I can suggest no more economical method of protection to it, from the weather, than to run sections of the stable roof back sufficiently far to protect, as they are thrown from the windows, the dung heaps, from the storms. This may be cheaply done by rafters, say 6 to 10 feet long, according to the extent of protection required, running out just above the dung windows of the stables, and supported by braces from the sills, or posts set in the ground at their outer extremities, and covered with boards or shingles. Such expense, however, is hardly worth while, if the dung is to be applied in its raw state to the land, as strict economy demands that it be taken, unfermented, on to the ground, where its gases and ammonia may at once be appropriated to the growing crop; and if composting it be the object, a covered stercorary in the yard, or under the sheds, where it would be already sheltered, is the better plan. In this very place, the theory of composting manures may, in the manner in which it is usually done, in the economy of its preparation, and in the efficacy of its benefits, be seriously questioned. Composts are, as the name implies, compositions of various fertilizing matter, mixed in mass, and each acting upon the other, by the aid of water and atmospheric air, assisted by turning up and mixing, by hand labor, at sundry times. They thus decompose, and amalgamate their various materials, each into the other, so as to become assimilated into one unform quality of substance. Now, if the same material, in quality and quantity were thrown broadcast

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upon the soil, and plowed or harrowed in, according to the requirement of the crop in hand, where the elements would dislodge its ammonia and gases, while the soil and the growing crop appropriated them as they passed off, instead of permitting all this fertilizing matter to escape into the atmosphere, as is the case in the workings of the compost heap, and leaving a mass of effete matter, by gardeners preëminently called *rotted manure*, the benefits of such process, to my mind can admit of little question. The destruction of noxious seeds I conceive to be its chief merit, as that is the first virtue always claimed for it by its advocates. But as this is only incidental to the subject of protecting manures, in connection with the plan of barn and stabling before you, and partly explanatory of this branch of the accommodation required in a complete barn establishment, I will not pursue the discussion. It will be seen that abundant conveniences exist for the housing and protection of manures.

To sum up the various merits claimed for a barn so comprehensive as this in its accommodation, and justify the expense of its construction, larger or smaller, as the circumstances of the farm may require, more is scarcely necessary than to say, that all kinds of forage and farm products should be stored, under shelter, for economical preservation and use. All kinds of stock, within the climate of the State of New-York, should be sheltered. These are quite as important as to cultivate and grow the crops, either for market or which the stock are to consume, in the best manner, or to produce and care for the life of the stock at the first. The saving in expenditure of the crops, and the greatest possible benefit to the stock in feeding them, together with due provision for their warmth and comfort, is a part of the system of good husbandry, and without these the system is imperfect. To effect this, a full and complete barn establishment is necessary—as much so as good fences, clean fields, a fertile soil, and a thorough understanding of his vocation, is to the prosperity of the farmer himself.

CONSTRUCTION.

This barn and attachments are built of wood. The sills are of white oak, that being the most durable timber in this region.

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Chestnut, black walnut, pine or locust will do as well. The other frame timbers may be of any kind of wood, as being dry they are not liable to decay. The sills may stand upon blocks of durable timber, set endwise in the ground, two feet below the surface, and the outside planked up to keep out the cold; or they may be underpinned with stone, laid dry or in mortar—the last plan altogether the best, but the first will do for several years, and the stone work laid afterwards. The sides are covered with pine boards, laid on vertically; the seams, or joints, battened with strips 3 inches wide, and the doors and windows hung and fastened in a substantial manner. Thus the whole building is dry, warm, convenient, and comfortable, to man, and to beast.

COST.

The cost of this structure, on the plan submitted, it is difficult to state, depending much on the price of lumber, which varies to the extent of fifty per cent—even more in different sections of the country; and as hewn timber, scantling, planks, boards and shingles, are the bulk of the material, the expense must vary accordingly as these articles are cheap or dear. Labor, iron work and nails differ little in prices all over the country. If stone underpinning be laid, it will add $500 to the cost, over wooden blocks. With the latter, in a lumber country the whole establishment may be built for $2,000. It will be cheap at that. With stone underpinning, complete, and boards at $12 to $15 per 1,000 feet, and other lumber in proportion, it may cost $3,000 to $3,500, depending somewhat on the finish given to it, which may be either increased or curtailed at pleasure. In the essentials, however, no part of the construction should be neglected.

After so fully describing the various parts of the structure, and their different accommodation to the numerous purposes demanded, it may appear superfluous to make a formal array of *claims* to its superiority over other structures of the kind. These may, however, be condensed into: compactness of arrangement and storage; accommodation to all the varieties of crop on the farm; economy in feeding out the forage; saving of labor in that department, by the convenient and compact lodgment of the stock,

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in connection with the food which they are to consume; the convenience and cheapness in the arrangement of the machinery, driven by either hand or horse power; exceeding convenience of the yards to all kinds of farm stock. In all these a great amount of manual labor is saved, a most important item with the farmer. And last of all, in the appearance of this group of building there is a comfort, a fitness and a corresponding character with the farm itself, which should commend itself to the consideration of every husbandman requiring buildings of the kind.

LEWIS F. ALLEN.

Buffalo, Jan'y 30, 1854.

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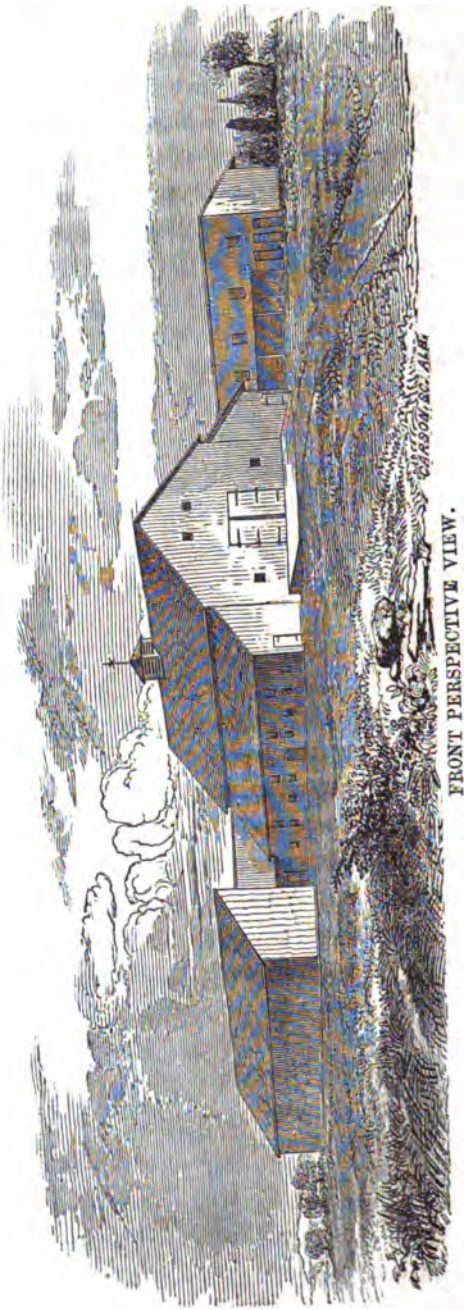

FRONT PERSPECTIVE VIEW.

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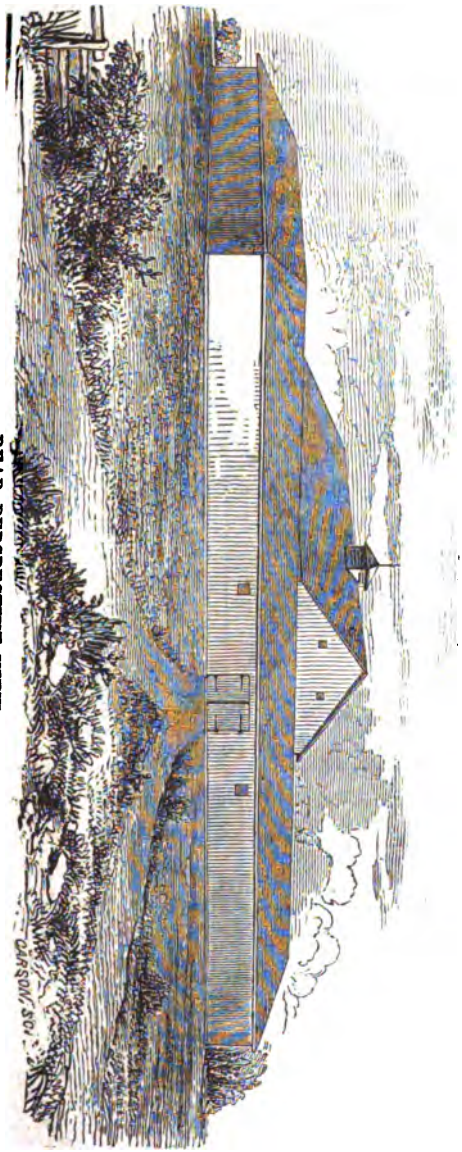

REAR PERSPECTIVE VIEW.

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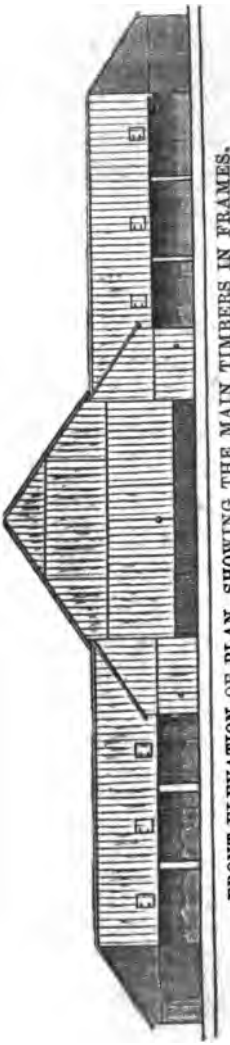

FRONT ELEVATION OF PLAN, SHOWING THE MAIN TIMBERS IN FRAMES.

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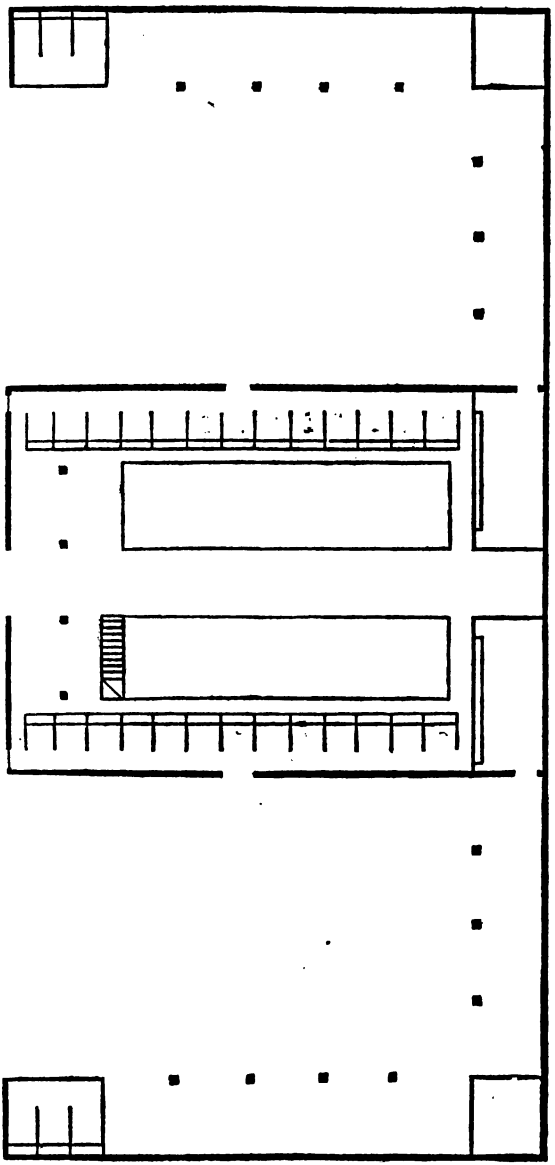

GROUND PLAN.—[This shows one more section of sheds, on each side in rear, than the elevation plan, thus showing how the range of shedding may be extended.]

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BARN MANAGEMENT.

Having completed the barn arrangement and its connected structures, it now remains to look into the administration of its stores, after the summer and autumn harvests have been gathered within its ample enclosures.

It is related of a distinguished capitalist of our State, that when a young man went to him with the question "how he should go to work to make a fortune?" the reply was, "Why the easiest thing in the world! Put a hundred thousand dollars at interest, and add the annual accumulation to the principal, which also place on interest. Follow it for thirty years, and you will be a rich man." "Very true;" replied the inquirer, "but where am I to get the hundred thousand dollars to start with?" "Ah, that is another matter!" said the man of millions. "If you have not the capital to begin upon, I can not advise you." So the first suggestion towards perfect barn management which I would name, is, provide competent buildings to give perfect shelter to all the crops and stock on the farm requiring protection, for without this important item an imperfect administration of barn affairs must be the consequence; and like the rich man's reply, without this prerequisite, any certain course of direction must be at fault. As, however, theoretically, the buildings are provided, the course of procedure will be detailed.

In the first place it is premised that the barn is accommodated with a horse power, which is to drive a thrashing machine and cleaning apparatus for grain, a cutting box for straw, hay and stalks, and possibly, if a really good one can be found, a crushing machine for coarse grains. In an adjoining building, perhaps, is a steaming apparatus, for cooking and softening the food for a portion of the stock. These are all necessary for the perfection of stock keeping in the winter. The hay and grain should be stored in the barn, in such a manner that it may be accessible, each by itself, whenever it may be wanted, without removing a mass of superincumbent forage which covers it, as every removal of the kind, to some extent, wastes and injures it, besides the loss of labor it involves. When the grain is thrashed, the straw should

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still be kept under cover, if there be room for it; for the moment it goes out of doors, let it be ever so well stacked, more or less waste and depreciation in quality is the consequence. If it is to be *cut up* for stock feeding, its storage inside is certainly an advantage; and if to be fed *long*, under the sheds to outside cattle, if carried out to them direct from the barn, or thrown down from the lofts over head, it comes out clean, bright and palatable. In whatever light, therefore, storage is viewed, it is beneficial to the straw of all cereal grains, and even to that of buckwheat, peas and beans. Indian corn stalks are also included, together with all the hay that is intended to be fed on the farm.

Having stable room enough, every neat animal, or creature larger than a sheep, should be tied up in a stall by itself, excepting perhaps, calves, which may run, to the extent of ten or a dozen, or even up to twenty, in number, in a stable or building, loose by themselves. They should have ample room under cover, and an open yard besides. The advantage of having each creature stabled apart, by itself, that it may have its own proper food, in proper time, quantity and quality, is greater than is usually supposed, as stock, even in the same herd, differ much in their appetites and habits. Sheep may run in very considerable flocks, with sheds to go in and out at pleasure, with feeding racks, or mangers beneath, *that storms shall not affect them while feeding, nor injure their food by falling upon it.* Any number of sheep, not exceeding two or three hundred, dependent much upon the size of the enclosure, may be wintered together. Even a greater number may be safely kept in a single flock, *provided they be not crowded, and are of equal size and age*, so that portions of them be not thrust out of the way by the others when feeding, and exposed to storms, when they should be at rest. It is all important that sheep should be thoroughly assorted when going into winter quarters—the old ones by themselves, and the lambs separate from all others, as each of these require warmer shelter, choicer food and closer attention than the others. Dryness under foot, particularly, is every thing to a sheep, next to food; and shelter over head, although not indispensable in our climate, will pay in their increased fleece and the lessened quantity of food they consume.

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WINTER FEEDING.

The stock being brought into winter quarters, if the large animals are stabled, each one should have its own stall, where it is to remain throughout the foddering season, and not be changed. After being wonted, they will find their own stalls, when returning to the stables, with perfect ease; they feed more quietly, and are every way better contented than when changed about, and have no permanent abiding place of their own. Their places once arranged, all the stock should be fed, so far as is possible, by the same hands, and at the same hours. To one who has observed them, it is surprising to find how animals are affected by subjection to a strict system in all things. The herdsman, if he be a fit man for his business, gets to know the habit and appetite of every animal under his charge, and treats them accordingly. He will save ten to twenty per cent of food in a winter's keeping, over what irregular attendants would do, and the cattle be better in temper and condition. So with sheep: they are the quietest, and most docile creatures in the world, or the shyest and most timied, as they are treated by those who look after them. Shepherds and herdsmen should always love those creatures with whose care they are entrusted. Coarse fodder may sometimes advantageously be fed out, under sheds, in racks or mangers, to stabled cattle, after being let out, in the morning, and watered. But this should be chiefly in severe and dry weather. As with sheep, cattle thus let out should be so assorted that the strong may not overrun the weak: or, where the climate is not too severe, and the shelters good, young cattle may run out in the yard, or under sheds, at will. To pursue this system economically, however, the yard and floor of the sheds should be well drained and the animals properly bedded.

CUTTING STRAW AND OTHER FORAGE.

The price of hay, straw, and other coarse forage, will much govern the policy of cutting it for stock. The convenience and cost of coarse grains, ground into meal, must also be consulted. All these should be made a matter of strict calculation, together with the cost of the increased labor to do the work, which is about

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double to that of feeding long forage. So far as the hay itself is concerned, the cutting it better prepares it for the stomach of the animal, saving much labor in mastication. It is quicker eaten and easier digested. Even if no meal is put upon good English hay, it is much better cut than uncut, for any animal, and moistened, with a trifle of salt in the water, they will eat it more readily; so also with coarser forage: but with bran, common mill feed, ground oats, corn, rye or buckwheat upon it, cut and moistened, the coarsest straw of all kinds is eaten up clean, and, according to the quantity of meal upon it, with greater economy than hay alone. Sheep, as well as cattle and horses, are very partial to it. Laboring oxen and horses, should, when kept up, always have plenty of cut food, when it is possible to provide it for them. There is a saving of at least twenty-five per cent in using cut feed and meal, over long hay and whole grain, besides enabling the animals to eat it in half the time. As applied to other stock, it must be a matter of calculation and convenience which method to pursue.

Water is one of the chief essentials in the stock yard. Where it is not available by a near stream or spring, or can not be thrown into the yards by a water ram, pipes, or pumped from a well, cisterns should be constructed and the roof water conducted into them. The horse power will work the pumps, to which they can be cheaply attached In good cisterns, water will keep all summer. It is computed that every ten feet square, or a hundred square feet of roof will yield five hogsheads of water per annum. An estimate may thus be very accurately formed of the size which cisterns must be made to hold the annual drainage of the roofs. When it is not necessary for cattle to remain in the yards for feeding, after watering, the sooner they are secured back in their stables the better. They are more content there than elsewhere, and lie snug and warm out of harm's way. If there be plenty of straw, the cattle should be liberally bedded; it keeps them clean and warm, and the litter becomes thus better fitted for manure. The stables should be cleaned at night, as well as in the morning. Cleanliness is indispensable to the health and comfort of all descriptions of farm stock.

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DISPOSITION OF MANURE.

As to the manure, the sooner it is on the land, after it is out of the stable, the better; therefore I should not get up expensive compost accommodations in the yards for its manufacture. Yet, if such preparation be necessary, a rough circular shed may be constructed centrally in the chief yard, where the drainage of the buildings may center—a scooped depression being made for that purpose—and underneath it the manure may be daily brought, in wheelbarrows, direct from the stables. As composting manures is a trade by itself, it need not receive further notice here. A deposit thus formed, where the runnings of the yard may converge, and the coarse litter, and all absorbent matter may be thrown to take it up, will probably furnish as valuable and economical a muck heap as can be invented, and it may remain thus sheltered until the necessities or convenience of the farm requires its removal.

A general summing up of the best Barn Management may be thus: ample and convenient barn and stable accommodations for all the grain, forage and stock of the farm: horse power machinery to aid in bringing every product into marketable or consumable condition, with the least delay and at the least expense: thorough regularity in feeding every kind of stock on the farm with that food most suitable to their growth, or their milking or fattening developments: a habitual economy and system in every department, regarding time, forage, litter and manure. Let nothing be lost: waste enriches none but impoverishes all.

LEWIS F. ALLEN.

Buffalo, February, 1854.

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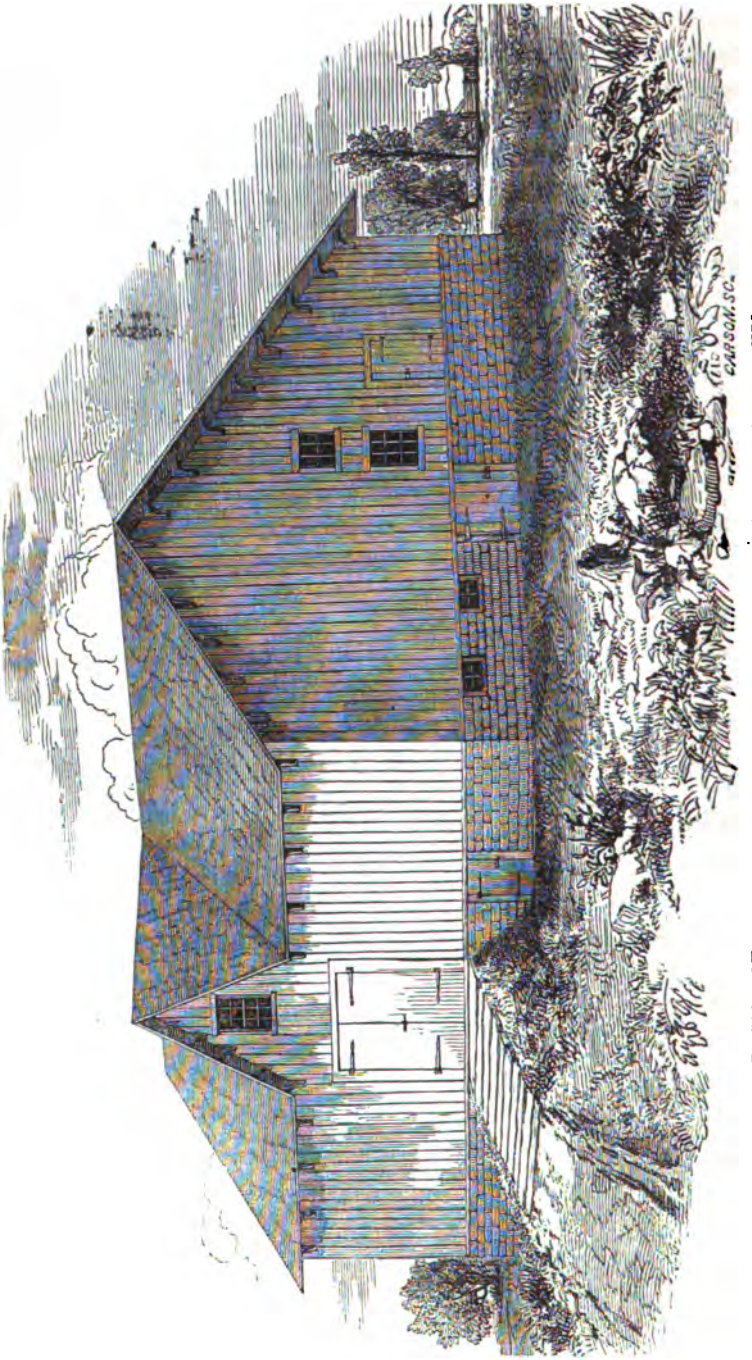

DESIGN OF BARN AND STABLING—BY F. R. ELLIOTT, CLEVELAND, OHIO.

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DESIGN OF BARN AND STABLING

IN REFERENCE TO

CONVENIENCE, ECONOMY AND SAVING OF MANURE.

BY F. R. ELLIOTT—CLEVELAND, OHIO.

[The accompanying design of barn and stabling, by F. R. Elliott, of Cleveland, Ohio, which was submitted to the committee, possessing many points of excellence, is given, with the plan of the buildings.]

The offer of a premium by the New-York State Agricultural Society, for the best plan of barn and stabling, not specifying any amount as to expense of erection, or any particular purpose to which the design should be devoted, the accompanying plan has been formed, as far as the designer can conceive, to meet the wants of a large majority of farmers. Were a plan to be made for cattle alone, or exclusively for sheep or horses, each would necessarily require to be different; but the offer of the society leaving the subject to be taken in a general view, it has been so considered, and therefore the present plan.

The designer not being by profession an architect, but only imbued with a crude taste as to the fitness of things and places, it is perhaps bold, here to offer a plan, which will, perchance come in competition with those of architects, whose entire time is devoted to the subject; nevertheless, in our earlier days, we were taught there was no such word as "can't," but, that "I'll try" often succeeds; so I present the plans and descriptions.

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In many sections of the Eastern States, and portions of New-York, a barn site can almost always be found on a farm, where the declining hill side may be made available. In other sections of our great country, sites must be taken, if near the farm house, where the ground is perfectly level. The present design, therefore, in its expense of erection, must be estimated somewhat by these chance natural or unnatural advantages.

The design of the plan is a main building of 40×56 feet, with shed projecting of 12 feet by 56. This shed may or may not be erected, as the builder fancies, or his wants demand. The advantage claimed of constructing its roof in a continuous line of main building, is that no more roof is required than when constructed in the common way, i e. of just sufficient height to shed rain and protect stock; the additional room secured, by so forming the roof, as designed, more than compensates for the timber and building materials required to construct it.

In our design, we have not specified any particular use for this portion of the barn, except the space of 8×12 feet, for fowls. It may, therefore, be built or left off, as desired.

The size of the main barn being 40×56, the basement story is constructed of stone or brick masonry, the height of posts therefrom, being 16 feet. The plan admits of being extended in size or diminished, to meet the wants of farms. If increased to 50×70 feet, the posts should be 18 feet high. If diminished to 30×40 feet, the posts should be 14 feet high. These changes will reduce or increase the capacity something more than one-third, while the general arrangement may be continued.

The scale of plan is made of sixteen feet to the inch, as a scale which carpenters can easily work from. The position of the barn is designed to face the west. This is, however, optional with the builder, and also must be, in measure, controlled by the site.

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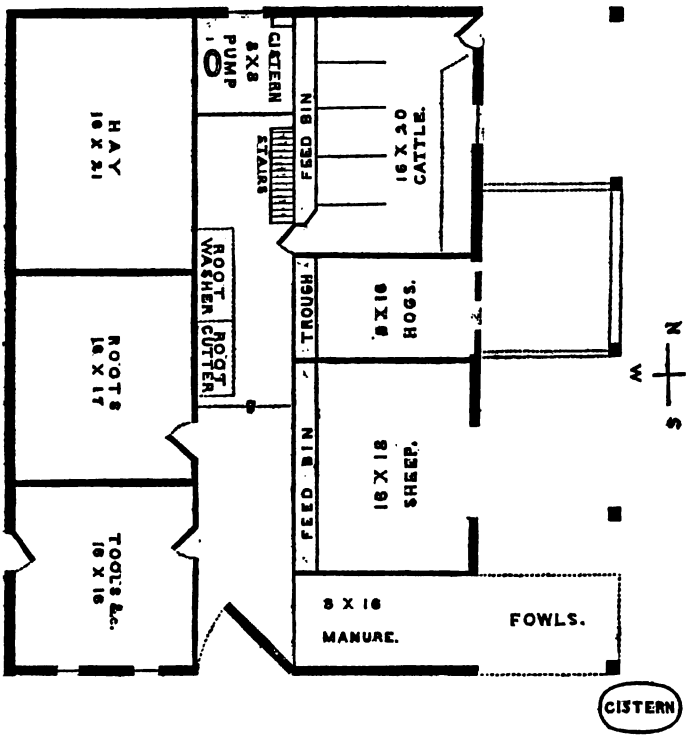

Ground Plan.

Basement.—This story is calculated to be seven feet high: the wall, eighteen inches thick at bottom, one foot at top; to be constructed of stone or brick, as may be cheapest and easiest procured in the section of country where built. Referring to the plan, it will be seen that 16×21 feet of the north-west portion, is designed for hay. This bay or mow (if you look the design through), will be found continued to the roof, and will hold of timothy and clover hay, about 18 tons; of red top, or blue grass and white clover, about 20 tons. This bay is divided from the passage east of it, by studding boarded up four feet; next the roots it is boarded the entire distance to a floor over head.

The root room, 16×17, it will be seen, is immediately underneath the main floor, in which is a trap door, through which the roots may be deposited. This room is divided from the tool room and passage way by 2×4 studding, boarded on each side,

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and forming a hollow wall. Bins may be made within its walls, to suit the wants of the various crops from year to year, as the owner may please. It is capable of stowing 2,000 bushels.

The tool room 16×16, has two small windows in the south end, along in front of which, a work bench may be placed. The outside door entering from the front, and immediately opposite one into the passage way.

The passage way is 8×56; the door at south end being the whole width. This door should be constructed to slide on rollers. If hung upon hinges, it will be best to open inside. This passage way being 8 feet wide, admits of a wagon or cart being backed, for loading of roots from the root room, and also for purposes of repair (being next the tool room), of a rainy day. It may also be stored here when not in use. The root-cutter and root-washer, are seen placed just beyond the door of the root room. At the north end a cistern should be constructed, of 8×8 feet, and below the level of this floor; this should have the water from the front roof. Upon the side next the hay, place the pump. In the wall of the north end, is a window for lighting this passage. The stairs leading above are seen: these are 2½ feet wide. Space sufficient between the root-washer and pump is left for getting at hay; while at the north-east corner of this passage is the bottom of a tube 1×2 feet, through which corn descends from the loft.

Next we have the room for oxen or steers, in all clear 16×20 feet, the heads of the cattle being toward the passage way. The floor should be made by two sills, each 14 feet long, 8×8 inches, placed east and west, one at the south end, where the partition comes for hogs, and one half-way thence to the north wall. The joists laid north and south with the north ends built into the wall. The west front, or at the junction of this room with the passage way, there should also be a sill of the same size, 8×8 inches, and 20 feet long; the north end of which should be built into the main wall, and the south framed to that next the hogs, or this may run the entire 56 feet of passage. The accompanying figure shows the position. These sills should be placed on pillars

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of mason work eight inches in the ground, and four inches above the level of the passage way, or the ground where the hogs are to be placed. This will give circulation underneath sufficient to preserve the timber, and at the same time give room for drain of urine. Two feet wide in rear of the cattle, is designed for stowing of peat or leaves for bedding; this is to be thrown in at a slide window, as shown in the plan, four feet from the entrance door. It is to be kept in its place by forming a bin of two inch plank to be let into grooves in posts placed at either end, so that as fast as the peat is used out, a plank can be taken away, and again replaced when the bin is re-filled. The door for entrance of cattle is shown next the north-east corner. It should be three feet wide, and slide on rollers behind the peat bin; or, if hung on hinges, should open toward the north wall as shown in plan. The floor of this stable should be first laid of half inch boards; upon them, breaking joints carefully, should be two inch plank; the drain should be two foot wide and square, sunk four inches, with an inclination of half an inch to the foot, descending toward the hogs. The same inclination should be made in laying the floor; the inclination from the bin to drain. The stalls are here designed four feet wide, and eight feet distance from under side of feed bin to edge of drain. Three and one-half feet wide is sufficient for cattle of ordinary size; and with stalls of that width, here would be stabling for six head. The feed bin is designed to be two feet wide at top, and eighteen inches at bottom two feet six inches high. From the base of this bin, at each division of stalls, posts run from floor to ceiling, to which chains or rings are affixed with which to tie the cattle. The bin should be made of two inch plank. If the builder is disposed, a water trough six inches square may be affixed at the back of the bin; this water trough discharging into the trough in the place designed for hogs. The pump, by means of a hose, can be made to fill this as required: or, water may be taken from a pump to be placed above this, and connected with the horse stable. [See plan of first floor.]

The place next south 8×16, marked "Hogs," is designed for swine, and may be divided as wanted. The manure from the

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cattle stable and also from the horse stable above is designed to be thrown in here, while a fence, as indicated by the dots in plan, is to be constructed under the shed, to give the hogs more range. The floor of this space should have descent to the middle, like a basin, and be formed of water lime and coarse gravel, spread on two coats, each two inches thick, and not used until perfectly dry and hard, when it will always so remain. The trough for feeding is here given, while water and corn as well as roots are of easy access. The sheep pen, 16×18, should have floor only of earth. The feed bin should be one foot wide at bottom, eighteen inches high, with curves cut into the front board at every eighteen inches distance, as in plan; the front board placed at such an angle as to make it two feet wide at top; the bottom of this bin should be eight or ten inches from the ground. Immediately in front of it, next the sheep, there may (or may not, as the builder pleases,) be placed, on a level with bottom of feed bin, a trough four inches wide and six inches deep for water; this may be supplied by means of a short hose, connected with the pump. The openings left in constructing the basement wall, for both sheep and hogs are shown in the plan. The division of these three sections, cattle, hogs and sheep, from the passage way, should be boarded up four feet only, leaving thus more free circulation of air, as also free opportunity for examining stock from passage way.

The last section on this floor, "8×16, manure," should have the bottom formed same as that where the hogs are placed. Under the shed portion it is designed that lattice work or palings be put up for keeping of fowls; this position giving them a south and east, therefore a warm position. Looking at the several floors it will be seen the fowls are to pass on up into the next story, which should be fitted for their laying room, and again on to the next or loft story, where they will roost. The passage by them from story to story to be made on a small ladder formed by taking a plank eight inches wide, and nailing strips of board eight inches long, one inch thick and one inch wide across it, at equal distances of four inches.

The posts supporting the sill of the shed are shown in the plan; these may be of wood set on stone, or better, should be built up of masonry, either brick or stone.

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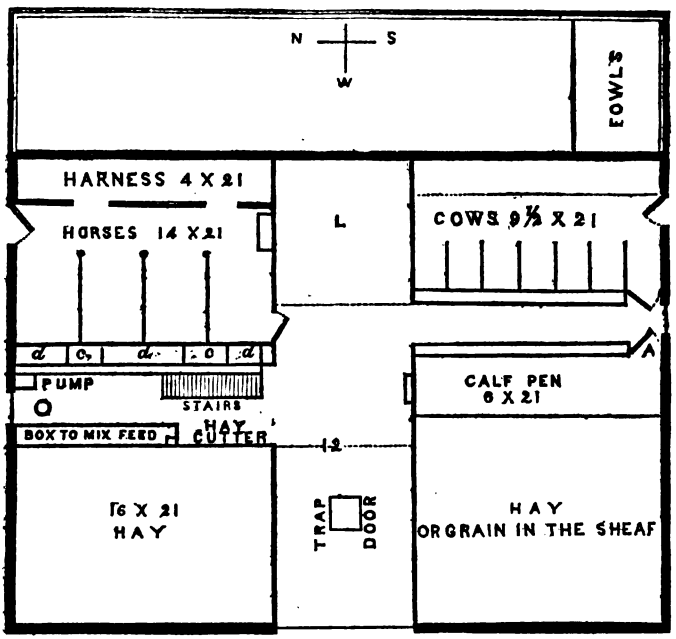
The cistern, marked at the south-east corner, is designed to take the water from the east roof of the building; rain water being, by all acknowledged, more healthy for animals than that of wells. To get the manure from the places of deposit, it will be seen their width is sufficient for backing in of wagon or cart.

Having now, as we think, explained the arrangement of the basement, we will proceed to the



First story or main floor.—Scale, 16 feet to inch.

First or Main Story: The "hay 16 × 21," it will be seen, is only the continuation of the same in the basement. Next, the main floor or thrashing floor is 12 feet wide, and is of course open up to the plate, as see "Second floor" plan. The trap door is shown for depositing of roots in room below. At the far end, marked L, it is intended that a swing gate may be formed, so as to make this 12 × 12 room for putting in of a sick horse, cow near calving, &c., &c., or for storing a buggy, &c., as may be wanted. The floor of this passage should be of two inch plank, either grooved and tongued together, or laid with half inch linings underneath. At the right of the entrance, and over the tool room below, may be stored grain in the sheaf, or hay. Next this is the calf pen 6 × 21 feet; next, a

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passage way for feeding, of three feet wide; next the stalls for cows, in a room 9½×21, with a bin in rear of them, for peat, two and a half feet wide, constructed in same way as that of the ox stable below. These stalls are marked three feet wide; but, three feet four inches is better, when it will hold six cows. The drain is to be formed same as that in ox stable, and the faeces be deposited in the manure place below, through a trap door formed next the entrance door and hung on hinges, which, when it is open, will render the closing of the outside door necessary; this will prevent any accident from carelessness in not closing the trap. The cows are to be fed from a bin made same as that in ox stable below. The passage way or feed way is lighted, as shown, by a window in south end. The doors or gates 3×5 feet for shutting off cows and also calves from this passage, are shown, and swinging back, as here indicated, the cows, in case of getting loose, cannot get to the calves, nor the calves to the cows, neither can they get into the passage way. The feed bin for calves is to be formed of two inch plank, of same width, size, &c., as that for sheep. The slope of the floor in calf pen is to be formed by furring on the joists and all tending toward the letter "A," where should be a trap door for passing the manure below. Upon the main floor in front of the calf pen, is a tube coming from the oat bin above. This is marked in the plan as projecting upon the floor; it will, however, we think, be better built in the calf pen, and only having its shelf for delivery on the main floor.

Upon the opposite side we have, first, marked the position of the hay cutter, next it a box 2×12 and three feet high for mixing up cut feed. In one corner of it next the hay cutter is the bottom of a tube from the meal chest above. The pump which draws from the cistern below as well as the position of the stairs, which are designed 2½ feet wide, are shown on the plan. In the corner near the pump is also shown the corn tube, which should have an escape shelf or draw formed, to take corn on this floor, when wanted; and back of the pump is shown a window for lighting this passage. Last upon this floor we have horse stable, 14×21, with 4×21 in rear for harness and placing of stable tools; *c. c.* mark the racks for hay; *d. d. d.* the bins for grains. This bin, by the way, is constructed by first running a plank 10 inches

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wide, the entire length of width of stable for the bottom; the front of it is then to be formed of two inch oak plank, running the same entire length and one foot wide. The feed boxes or racks *c. c.* are then made by a board next the horse, 18 in. wide, and running from the top of bin to ceiling above; a cross bar is then placed over the bin into which rollers are fixed, and again into a cross bar near the upper ceiling; a board 12×10 inches is then fitted underneath this lower cross bar and secured by a spring bolt, to be taken away whenever the seeds from the hay rack require it to be emptied. Next the horses heads and passage way it is only boarded up even with the top of the grain bin, except so much as is required to form the hay racks. In front of the grain bin or next the passage is to be made a water trough, 6×6 inches, running the entire front and having its upper edge one inch above that of the feed bin. This trough may be filled by a hose from the pump and emptied through a hose or tube into the water trough of the cattle below, or directly into that of the hogs. The stalls are designed to be five feet wide in the clear, and the stall partitions to be eight feet long and boarded entirely to the ceiling, four feet from the horse's head; and the remaining four feet, only four feet high. A 4×4 post to be halved on to the joist at the back end, and a 2×4 at distance of four feet; the boards then running horizontally from head to heels, the posts or partitions will be secure. The tying of the horses may be by a ring secured by a good staple bolt, and that secured by a screw put on to the grain bin, and the halter passing through the ring with a slight weight on its end. The width of the stable being 21 feet, it will at once be seen, allows of the manure and drainage passing by trap door into the room where hogs are kept below; the lower room for cattle being only twenty feet wide. The depth of the stalls is twelve feet from rack to harness partition; the floor of the stalls should be first laid of half inch boards, then two inch plank, being careful to break joints well; the inclination should be only two inches in the nine feet, from front to rear, where a drain should be formed by a plank being laid longitudinally the width of the stable, and the ends of each plank running under the horses, being halved into it; then the center of this longitudinal plank to be grooved for the drain. This drain is to continue and empty itself at the trap door; the stable may by

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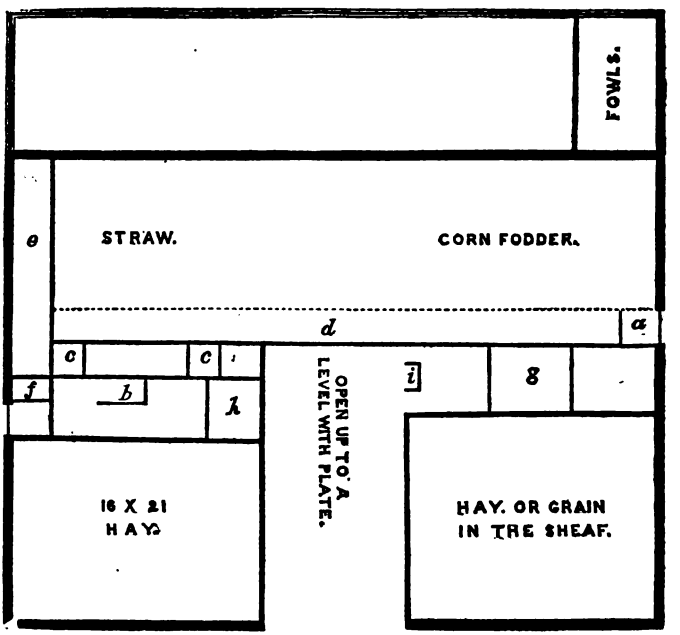
washed, when required, by a hose from the pump. The place 4×21, marked for harness and stable tools, may have sliding doors or be left open, as shown in the plan—doors would, of course, give it more finish. The partition of the stable from the main floor or room L, should be boarded up to the flooring above. The outside door as well as that leading from the stalls to the main floor, are designated in the plan; they should each be three feet wide and eight feet long. This story in height, be it remembered, is estimated at nine feet; the place in this story under the shed part, marked "Fowls," is designed for the laying room, and should have the nests made in boxes around the sides on the floor, with only such openings as would admit the passage of the hens, while slides should be formed for the purpose of getting the eggs.



Second Story: In this "hay 16×21" is shown continued from the basement, the space over the main floor being left open, up to a level with the plate. "Hay or grain in the sheaf," on the opposite side; "*a*" is a place for putting down hay for feeding cows and calves; "*b*" is the stair landing; on the side next the hay mow is room for taking of hay to feed the horses in their racks, "*c c*"; "*d*" is a passage way to be left three feet wide, having a railing

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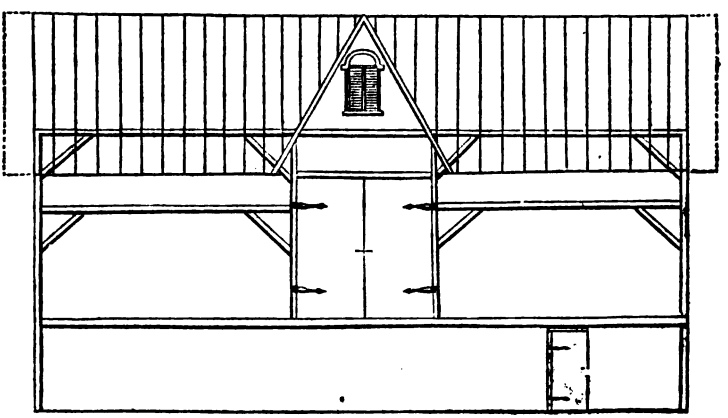
along that part, which crosses the main floor way; "*e*" is a corn bin, which is to be formed with slats at the outside or north end; "*f*" is the tube through which the corn descends to basement and second story; "*g*" is a grain bin in three divisions, more or less, as wanted, with the tube "*i*" for passing oats, &c., down the next story; "*h*" is meal bin, having also a tube conducting to the box for mixing feed below; a window is also designed next "*f*," for lighting. The storing of straw is designated, and, if desired, a trap door may be made, through which it may be passed into the horse stable below and in the rear of the horses. The storing of corn fodder is also designated, as being near where most likely wanted; i. e., to feed to cows.

The use of the room under the shed (if built) may be for hay, straw, &c., or, if wanted, an additional corn and oat bin may be formed in rear of the horses and extending along over hogs and sheep. A door from the main floor and also one from the horse stable may be made to communicate; or, if more wanted for stabling, an entire row of stalls can be formed, sufficient for 16 head of cows or young cattle, horses, &c.

The yard fences, of course, not being part of this plan, it is perhaps not in place to speak of it; yet the arrangement of stables is such, that, if divisions are made, the oxen will be separated from the cows, and the sheep will have, as they should, an open run and permitted to go in their shelter or out, at their pleasure, and at the same time not be with either cows or oxen.



West front elevation, showing the position of timbers and doors.

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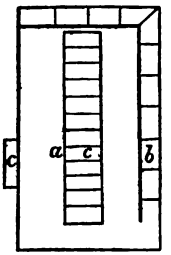
The gable in west front is designed to give more character to the barn, than a plain roof would present; and its floor or ground plan being laid over the main or thrashing floor and on a level with the plate, is shown in the plan.



Gable with front for pigeons.

It is designed to be occupied by doves (or pigeons, as generally denominated); "*a*" being the roosts three feet wide, and running a length of 16 feet, and hanging, suspended by the rafters, 18 inches therefrom; "*b*" is a box with divisions for nests, while at "*c*" there is doorway into which you enter by means of an upright ladder from the main floor below.

The building is designed, above the basement, to be built of wood, and the posts being 16 feet, it will be seen that in boarding it up and down and battening it, 16 feet boards will cover both plate and sill, and without waste of lumber. The boards are designed to be one inch thick, straight edged, and may be from six to twelve inches wide, separate widths, however, should be selected for each side, as for instance, all boards of 6 inches for the south side, all of 8 inches for the east, all of 10 inches for the west, and all of twelve inches for the north; the battens should be three inches wide and half an inch thick. All should be rough, and when up, first coated with boiled oil, after dry, another coat with boiled oil, and while green, heavily sprinkled with light brown sand. The doors, of course, will need to be of planed stuff, and so the window casings and sills and caps. The window in the front gable may be formed as represented in the perspective drawing, or it may be as shown in the front elevation of the timbers; in the latter case it is shown as blinds—this may be, or glass may be used, as the fancy or opinion dictates; either will answer.

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Those who care not for appearance, other than plain and substantial character, may dispense with this gable, and thus reduce the cost of the building some thirty dollars. The brackets presenting appearance of support to the projecting roof, are to be cut from two inch plank.

At the junction of the gable ridge of roof with that of the main roof, there should be two feet square, made as it were raised four inches, this to ventilate, as all is free and unobstructed from below.

Estimate of materials and cost for building all, including shed continuation.

Excavating and leveling, ...	$20
1,800 brick, at $4, ...	72
40 bushels lime, ...	10
Mason work, ...	30
4 sills, 52 feet each, 8×8.	
3 " 56 " 8×8.	
4 beams or girts, 52 feet each, 6×6,	
4 " 56 " 6×6,	
4 " 40 " 6×6,	
3 plates, 56 " 6×6,	
8 posts, 16 " 6×8,	
8 " 21 " 6×6,	
4 " 9 " 6×6;	
Estimated 6,500 feet, board measure, at $14, ...	91
300 feet running measure of 4×4 for braces, door posts, &c.,	
250 " " 2×4 for girts, first story,	
200 " " 2×8 for collar beams and supports,	
2,000 feet running measure of 2×4 at upper end, 2×6 at lower end for rafters;	
Estimated 2,500 feet, board measure, at $14, ...	35
4,000 feet roof boards, at $12, ...	48
12,000 shingles, at $4, ...	48
3,500 feet inch boards for covering, at $18, ...	63
1,000 half inch for batting, at $18, ...	18
Joiner work for covering and framing, ...	40

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Basement story.

2 sills 14 feet, each 6×8;
2 " 56 " 6×8,
2 " 16 " 6×8, cost, ... 10
450 feet running measure of 2×4 for partition, &c.
112 " " 4×4 for placing top of studding in passage way to support timbers above,
800 feet two inch plank for flooring, &c.,
400 half inch boards for linings,
12 joists each 10 feet 2×8,
1,200 feet, 14 feet long, inch boards, for partitions, &c.,
In all estimated, 3,500 feet at $14, ... 49

First story.

The sills of this have been estimated except that midway in horse stable, and one midway of south side and the main floor.

1 sill 52 feet long, 6×8,
1 " 36 " 6+8,
1,500 feet running measure of 2×8 joists,
1,000 " " 2×4,
3,500 feet two inch plank for floors, &c.,
1,600 feet inch boards for partitions, &c.,
In all estimated at 8,000 feet, at $14,..... 112

Second story or gable floor.

1,500 feet running measure, 2×6 joists,
1,500 feet inch boards for floor, &c.,
Estimated 2,300 feet, at $14, ... 32
Joiner work to complete, ... 60
Nails, hinges, window glass, &c.,..... 50

$788

If the shed is left off it will reduce the cost about fifty dollars.

The expense of cisterns, pump, root cutter, &c., are properly not a part of the barn but they may be estimated to cost, say fifty dollars.

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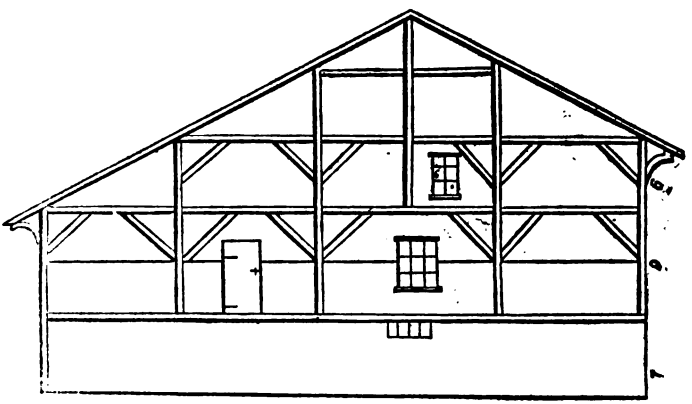
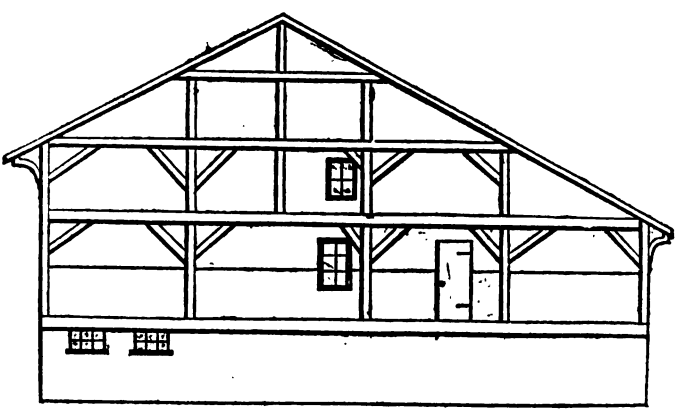
The prices of lumber, brick, etc , are mere surmise, hardly any two sections ruling the same; but as a whole, we think the estimate will cover the whole expense in any section of the northern States, while there are many sections where the reduced price of lumber, &c., would make a difference in reducing the cost, to something like two hundred dollars. There are also many sections where stone is convenient of access upon the farm—and also many, indeed a great proportion of farms, upon which all the timber could be got, and the cost, instead of, as here estimated, being six cents per running foot, would only be two cents, making a difference in actual outlay of some seventy dollars.



Frame work of north end.



South End.

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DAIRY.

BUTTER.—JOSHUA BALLARD 2D, HOMER, CORTLAND COUNTY.

Method of Manufacture.

As soon as the milk is drawn from the cow, it is strained through a fine wire sieve into pans about six quarts each, and set on racks made for the purpose, and remains there until it is sour, but never so long as to become thick, this should always be avoided, if you want a good article of butter. My milk room is entirely above ground, and situated on the north side of my wood house, and always excluded from the sun through the heat of the day. If the weather is very warm, the cream is put into tin pails of about twenty quarts each, and set in tubs of cold water the night before churning, which is always done as soon as possible in the morning.

I use a dash churn propelled by two sheep; during the churning, cold water is applied two or three times. After it is gathered, it is taken into a bowl and washed until free from the milk, then salted with Ashton's Liverpool salt, and no other substance whatever is allowed to be put in. Salt is used at the rate of about fourteen ounces to sixteen pounds of butter, worked lightly and set in the cellar till the next morning, when it is again worked and packed in tubs; a cloth is then spread on the top, with about half an inch of salt, which is always kept moist until taken to market, be that when it will.

And here I wish to say, if there is one branch of business more than another that should be closely watched and every thing done in season, it is a butter dairy. The number of cows I have kept this season is eighteen, from which I have sold thirty-four hundred and one pounds of butter, besides what has been con-

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sumed by the family and laid by for winter use, exceeding 200 lbs. to each cow. The three tubs of butter which I present for your inspection, were manufactured in October, 1853.

Yours, &c., JOSHUA BALLARD, 2D.

Homer, February 2nd, 1854.

Manufacture of Cheese.

We have deemed it very desirable that in this important branch of dairy management, every practical information that could be obtained, should be furnished to our dairymen, to enable them to compete successfully with the best dairies in the old world. While it is true, that very many of our dairymen have attained very great perfection in the manufacture of cheese, it is not to be denied, that a very large portion still manufacture a very inferior article, which brings but a small price in market, in comparison with the best dairies. To endeavor to remedy this, as far as possible, has been the constant aim of the Society, and it is a matter of congratulation, that so good a degree of success has attended the efforts, which have been made. The article by A. L. Fish, on the management of cheese dairies, Transactions 1847, pag. 262, is one of the best yet published; and in succeeding volumes several interesting and valued articles are to be found.

Mr. Winslow's method of making his cheese accompanies this. He is one of our best dairymen in Jefferson county.

In hopes, that our dairymen will strive to improve, we give a very interesting and important article on dairy management, from the "Cyclopedia of Agriculture;" a work, published in England. The details of the manufacture, and the analysis of various kind of cheese, cannot, we think, but prove useful—and we shall be greatly surprised if this article is not read with interest by our dairymen, and lead them to a more careful management of their establishments, and thus eventually secure to them a rich reward in a better article for market.

Dairy Management—Cheese.

"The scientific principles involved in the important manufacture of cheese are very little known. Milk contains about four-and-

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a-half per cent. of caseine, which is the principal ingredient of cheese. This caseine is almost exactly of the same composition as animal flesh. It is held in solution in the milk by means of an alkali. Any acid which removes this alkali, converts the caseine into an insoluble curd, which, when collected and dried, forms cheese. Muriatic acid is used for this purpose in some parts of Holland; vinegar, tartaric acid, cream of tartar, and even some of the salts of oxalic acid, such as salt of sorrel, are employed in various countries. The acid, formed when milk becomes sour, also produces the same effect, so that sour milk is used instead of rennet in some parts of Switzerland. All these additions are for the express object of making an insoluble curd, by removing the alkaline solvent of the cheese. This insolubility may also be produced indirectly as well as directly. Various substances have the property of forming an acid in the milk itself (lactic acid), which, removing the solvent of the caseine, causes the proper formation of a curd; for most kinds of cheese this indirect action is preferred. In other countries, the coagulation or curding is effected by various means, as by the juice of figs or thistles, or by decoctions of the flowers of the artichoke, of the crow-foot, and of the white and yellow bed-straw. A peculiar stringy curding is obtained by the juice of the butterwort (*Pinguicula vulgaris*). But in this country it is usual to depend on the peculiar action of the rennet. The stomach or intestines of young animals, especially of the sucking calf, pig, lamb, or kid, have been found to possess this indirect action. Little is known as to the exact chemical processes which ensue when rennet is added to milk. All, in fact, known is, that the stomach, dried and prepared as rennet, must be in a state in which it may decay, but not rapidly enough to run into putrefaction. The active principles of the rennet are certainly substances in the act of decay, and its peculiar value is, that it can be preserved without losing this power, which, though in abeyance, may be called into activity, when desired. The processes used in preparing the rennet, such as salting, smoking, treatment with salt, lemon juice, and spices—have for their object the prevention of putrefaction, and the repression of decay. A certain amount of decay is necessary; and, for this reason, rennets are preferred in most districts, when

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they have become somewhat aged by keeping. The active changing principles are soluble, and, therefore, may be extracted by water, and used directly for the curding of the milk; or the rennet itself being added to the milk, gives out its soluble ingredients to that fluid. A further decay of the exhausted rennet produces more of the transforming materials, and restores it to its active state, so that it may be used over and over again. Chemists, at present, know the fact, without having ascertained its cause, that decaying substances, such as putrid flesh and sour milk, produce a change in fresh milk, forming, among other substances, various acids which effect its curding or coagulation.

Prepared rennet is a means of effecting this change in a regulated manner, and without the production of those offensive substances formed during the putrefaction of milk. It is by the communication of the decay of rennet to the milk—just as a decayed apple causes decay in a fresh apple in contact with it—that this change is effected, and not by the addition of any peculiar substance; for it has been found by experiment (Berzelius), that one part of rennet, which had curded 1,800 times its own weight of milk, had decreased in weight only 0.06. This view is obviously correct, when it is considered that one square inch of good rennet can curdle 80 quarts of milk, or that one spoonful of its infusion produces the same effect on 120 quarts. The action finds its parallel in that of yeast or sugar. In this case, a very smal quantity produces the alcoholic fermentation on an immense amount of the saccharine fluid. There can be little doubt, that the manner of preserving the rennet produces a very great effect on the qualities of the cheese produced. It is much more probable that the different kinds of decay, caused by rennets differently prepared, have much more influence on the character of the cheeses of a district than any deviation in climate or in pasture. As the cheeses of commerce do not consist simply of caseine, but also contain butter and other ingredients of the milk in small proportion, it is obvious that the qualities of cheeses must depend much on those of the milk itself. The milk of cows, goats, and ewes, has very different compositions and properties; and cheeses made from them differ also very materially. Minor dif-

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ferences in the milk of the same animal also produce notable variations in the cheese of different districts, even though apparently the same materials are used in their preparation. The differences are, of course, much increased according to the practices of districts of adding or subtracting cream from the milk used. The former method gives the rich Stilton cheese, while the removal of all cream yields the poor horny cheeses of Essex and Sussex. The use of whole milk produces such cheeses as those of Glouchester, Cheshire, Wiltshire, Cheddar, Dunlop, and the Gouda of Holland. The common Dutch cheeses are usually obtained from once-skimmed milk, so that they still contain butter, but less than the varieties just named.

In the preparation of cheese the application of heat to the milk is useful, by hastening the chemical action, and by enabling the whey to separate more readily, and yield its butter to the curd. The more or less complete separation from the whey has an influence, not only on their taste and power of keeping, but also on the flavor which the cheese acquires by age. The alterations resulting from curing, and from the time required for ripening the cheese, have not yet been sufficiently investigated to be explained on scientific principles, although chemists have recognised various bodies as the result of these changes. The pungent smell and taste are obviously due to the volatile acids in butter, though, doubtless, other unknown bodies contribute their part in the production. Valerianic acid, and a crystalline substance called leucin, ammonia, partly combined with caseine and partly as salts, have also been detected. All these ingredients exert an important influence in giving character and flavor to cheese. The caseous ingredient of milk is not confined to that fluid, but exists even more abundantly in peas and other leguminous seeds. But the absence of butter, and the difficulty of forming artificially the due proportion of these and other accidental ingredients, have prevented the application to other powers of caseine for the purpose of cheese making. Several kinds of cheese have been analyzed by Mr. Jones, in Professor Johnston's laboratory, with the following results :—

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	Water.	Caseine.	Fat.	Ash.
Skim milk cheese, made June, 1845, analysed June, 1846, ...	43.82	45.04	5.98	5.18
Double Gloucester cheese, made June 1845, analysed June, 1846,	35.81	37.96	21.97	4.25
North Wilts cheese, made June, 1845, analysed June, 1846,.....	35.58	25.00	30.11	6.29
North Wilts cheese, made September, 1845, analysed Sept., 1846,	36.34	31.12	28.09	4.41
Dunlop cheese, made in 1845, analysed in 1846,.....	38.46	25.87	31.86	8.81
"Lanarkshire Brick," made June 1846, analysed July, 1846,.....	41.55	28.84	29.60	2.78
North Wilts cheese, made July, 1846, analysed September, 1846,	40.58	28.25	27.44	3.73
North Wilts cheese, made May, 1846, analysed Sept., 1846, .. .	44.80	28.16	23.04	3.09
Cheddar cheese, made in 1845, analysed in 1847,.....	36.04	28.98	30.40	4.58

It will be seen from the foregoing analyses that cheese is an exceedingly nutritious substance, standing considerably higher in this respect than butcher's meat. Dividing the constituents into the principal nutritive groups, cheese is composed as follows:

Flesh-forming substances,.....	31.02
Heat-giving substances, ...	25.30
Mineral matter, ...	4.90
Water,.....	38.78
	100.00

The cows are milked twice a day, at 5, a. m., and at 5, p. m. The cheese being always made in the morning, the evening's milk is poured into basins, or coolers, and stands over them. It is then skimmed, to remove the cream; and a portion of it, about one-half, is warmed in a flat-bottomed, shallow pan, to about 100 degrees, and then poured into the cheese tub, along with the morning's milk, and that portion of the evening's milk not warmed. The cream, mixed with a little warm milk, is now

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added, and the temperature of the whole being somewhere between 80 and 85 degrees, the rennet and coloring are also added, and well stirred and mixed with the milk. The annatto, or coloring matter used in the preparation of Cheshire and other cheeses, is added to the milk before the rennet. Mr. White states that half an ounce to about seventy-five pounds of cheese, is a sufficient quantity; and that it is commonly dissolved in a pint of warm milk on the previous night, for addition to the bulk in the morning. After the addition of the rennet, the tub is covered carefully up for an hour, by which time, under ordinary circumstances, coagulation will begin, and in fifteen minutes more be completed. The curd is now broken; which, for a sixty pounds cheese, takes about twenty minutes, and then allowed to rest fifteen minutes, to separate from the whey. The whey on the top is removed by pressing down a flat-bottomed pan gently on the curd, and allowing it to fill. The whey is poured into the *set* pan from the cheese tub. The curd, so far freed from the whey, is again broken by the "breaker," or very gently by the hand, and again allowed to settle and separate. In about half an hour the whey is baled out, and, as the curd gets more and more solid, it is drawn to one side of the tub. When this has been accomplished, and the free whey all removed, a semicircular perforated board, made to fit one-half of the tub, is placed upon the curd, and pressed down with a thirty pound weight, which gently squeezes out the whey. This whey is poured through a sieve into the *set* pan, to detain the particles of curd floating in it. The weight is now removed, and the curd cut in pieces six or eight inches square. The board and a weight, double the last, are again applied. More whey is pressed out, and when this has been repeated once or twice with heavier weights, according as the condition of the curd requires, the curd is ready for being put into the cheese vat.

Pressing.—Before placing the curd into the first or large cheese vat, a willow basket is sometimes used; the curd is cut into smaller square pieces than before, and gently broken by the hand in the act of putting it in. When put in the vat, which it should not quite fill, it is covered with a close fitting board, and placed under a light and continuous pressure. When the whey ceases

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to drain from the sides of the vat, the curd is taken out, and broken as before. The curd is now put into the proper cheese vat; but before this, a cheese-cloth is placed in the vat. After the curd is all in, the ends of the cloth are tucked over it, then covered with the circular board ("sinker,") and placed under heavier pressure than before. To assist the discharge of the whey, iron skewers are thrust through the vat holes into the cheese, and, after a few minutes, withdrawn, when the whey follows. When the whey has ceased to follow the skewers, on being withdrawn, the vat is taken out; the curd, still in it, is cut into sections, every two or three inches, with a dull-edged knife, and again pressed and skewered as before, for a quarter of an hour or twenty minutes. After this, the curd is taken entirely out of the vat, cut into large pieces, each of which is broken by the hand, then placed in a dry cloth in the vat, and covered, pressed, and skewered; which is again repeated, until the whey is nearly all extracted. These operations, from the time of coagulation, will consume about five or six hours, by which time the curd should be sufficiently dry for being salted.

The best tests of complete coagulation, according to Mr. White on whose authority many of the above remarks are made, are the firmness of the surface of the curd when pressed by the hand, or skimming dish, and the pale-green color of the whey.

Salting.—The curd, being now comparatively free from whey, is taken out of the vat, cut into pieces, and crumbled down with the hands; or, what is better, by passing it through the curd mill. The salt at the rate of 1 lb. to 46 lbs. of curd, is then intimately mixed with it. The salted curd is again returned to the vat in a dry cloth, of finer texture than before; and, in order that it may be pressed properly, it should more than fill the vat. A tin hoop is put round that part of the cheese which projects from the vat, the lower edge being within the vat, and sinking along with it when put under the press. The pressure is now considerably increased, and the skewering continued. In an hour the cheese, now completely formed, is taken out, its edges pared—the parings being put into a hole on the top, scooped out

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for the purpose—inverted, and put into the vat, a dry cloth being previously placed on it, and again subjected to heavier pressure. Some time during the evening the cheese is again turned, and receives a dry cloth which terminates the first day's operations. On the second day, it is turned twice or thrice, dry cloths given, and the skewering continued. On the third, this turning and dry cloths are twice repeated, but the skewering is discontinued. This usually completes the process of making; but some continue the pressure for another day. External salting is more practised in Cheshire than salting the broken curd."

STATEMENT OF MANUFACTURING CHEESE,

by John Winslow, Watertown, Jefferson County.

The milk at night is strained into a tin vat, and if the weather is very warm, a pail or two of cold water is added to the milk, or a large tin vessel filled with water and left standing in the milk through the night; in this way the milk keeps cool and sweet. In the morning the cream is taken off and the morning's milk is added to the milk of the previous night; the cream also that was taken off is warmed and added to the milk, then the whole is warmed to 90 degrees, the rennet then added and left to stand from 40 to 45 minutes; the curd cut with a knife and left to harden for 10 minutes. It is then carefully broken up with the hand and left to settle a short time; the whey is drawn off, through a tin strainer attached to the vat, and placed in a *sheet iron* vessel, and set in a large kettle of hot water, to heat for scalding. I continue to break the curd carefully, until it is very fine, and the whey drawn off sufficiently for scalding; I then raise the heat to 100 or 102; the whole is kept moving while heating; the curd remains in the scalding whey for 30 minutes or until I think it sufficiently scalded, which is known by tasting or feeling. The remainder of the whey is drawn off, and the curd worked and cooled with cold water, until it is nearly cold; the salt is then worked in at the rate of one pound to 28 or 30 of cheese, it depends upon the moistness of the curd; I use the Onondaga salt. It is then pressed two or

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three hours, when taken out and turned, a bandage put on, and again pressed—the whole amounting to 24 hours—and then removed and slightly oiled a few times, but turned and rubbed every day with a cloth wrung from hot water or whey. In this way the cheese remains smooth and bright, also free from mould.

JOHN WINSLOW.

Watertown, Jefferson Co., N. Y.

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STATEMENT OF FARM CROPS,

TO WHICH PREMIUMS WERE AWARDED AT WINTER MEETING,

February 1854.

SPRING WHEAT.—2 ACRES 1 ROD—CHARLES W. EELLS, WESTMORELAND, ONEIDA COUNTY.

Statement of the method of cultivation, &c., of a crop of Tea spring wheat, raised by Charles W. Eells, of Westmoreland, Oneida County, N. Y.

The previous crop was corn, manured with twenty loads of coarse straw barn-yard manure, per acre, plowed in eight inches deep; also about half of the piece was manured in the hills, with hog manure, at the rate of six loads per acre, and the remainder with fine rotten barn-yard manure. The crop of corn was a good one, and would average eighty bushels per acre. The soil is composed of gravel and loam, and in some places clay and sand in good condition. The farm is located in the town of Westmoreland, Oneida county, N. Y., on an elevation, with a rolling surface inclining to the east.

The land was plowed from eight to ten inches deep, the 28th and 29th of April. April 30th sowed four bushels of Tea spring wheat, broadcast by hand, previously prepared by washing in strong brine and adding as much slaked lime as would adhere to the wheat, while wet. Sowed before harrowing, and cultivated over once with a large steel tooth cultivator, and harrowed with a double harrow, and then rolled. There was no manure applied to the crop of wheat. We believe in covering wheat deep as possible with a cultivator. The wheat was cut with a cradle, about the

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20th of August, laid one day in the swath, then bound and set up in stooks a few days, then drawn to the barn. The entire crop was thrashed the 1st of September with a thrashing machine and separator, and was run through a good fanning mill once.

The piece contained two acres and one rod, and produced seventy-six bushels and fifty-two pounds, by weight, being an average of thirty-eight bushels and eighteen pounds per acre. I sold forty bushels to W. H. Healy, Clinton Mills, for one dollar and twenty-five cents, per bushel; the remainder is reserved for seed, and is now engaged for one dollar and fifty cents per bushel. I sold it to Mr. Healy, about the middle of September; I measured it in a sealed half bushel, and Mr. Healy weighed it on his scales; it weighed sixty-four pounds, a bushel, by his scales, which agreed with my weight. Mr. Healy called it the best and cleanest spring wheat he ever saw.

Expense of cultivation:

1½ day plowing, at $2.00,.	$3 00
½ day harrowing and rolling, at $2.00,.....	1 00
4 bushels seed, at $1.25,.....	5 00
3 days cradling and binding, at $1.00,.....	3 00
Drawing to barn,.....	1 00
Thrashing, ten cents a bushel,.....	7 69
Interest on land, at $50.00 per acre,.....	7 00
Total expense,.....	$27 69

Value of crop:

By 76 bushels and 52 pounds, at $1.37½, ...	$105 69
Value of straw, ...	10 00
Total value of crop,.....	$115 69
Total expense,..	27 69
Profit, ...	$88 00

CHARLES W. EELLS.

WESTMORELAND, *December* 28, 1853.

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Oneida County, ss:—William Richmond, being duly sworn, says, he is a surveyor; that he surveyed with chain and compass, the land upon which Charles W. Eells raised a crop of spring wheat, the past season, and that the land was in one contiguous piece, and the quantity is two acres and one rod, and no more.

W. RICHMOND, *Surveyor.*

Sworn to before me, this 15th day of December, 1853,
H. M. BURCHARD, *Justice of the Peace.*

Oneida County, ss:—Charles W. Eells, being duly sworn, says, that he raised a crop of Tea spring wheat, the past season, upon the land surveyed by William Richmond; and that the quantity of grain raised thereon was seventy-six bushels and fifty-two pounds, measured in a sealed half bushel; and that he was assisted in harvesting and measuring said crop by W. Irving Quinn, and that the statement annexed, subscribed by the deponent, as to the manner of cultivation, expenses, &c., is in all respects true, to the best of his knowledge and belief; and that the sample of grain exhibited, is a fair average sample of the whole crop.

CHARLES W. EELLS.

Sworn to before me, this 30th day of December, 1853,
H. M. BURCHARD, *Justice of the Peace.*

Oneida County, ss:—W. Irving Quinn, being duly sworn, says, that he assisted Charles W. Eells, in harvesting, getting out, and measuring his crop of wheat, referred to in the above affidavits, and that the quantity of grain was seventy-six bushels and fifty-two pounds, as stated in the affidavit of Charles W. Eells.

W. IRVING QUINN.

Sworn to before me, this 30th day of December, 1853.
H. M. BURCHARD, *Justice of the Peace.*

SPRING WHEAT.—TWO ACRES TWENTY RODS.—HART MASSEY, WATERTOWN, JEFFERSON COUNTY.

The land upon which the crop of wheat was grown, is a gravelly loam; was in corn and potatoes the previous year. There was 20 loads of distillery manure put on the piece last winter, and well plowed in about the 15th of April; was sown broadcast, on

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or about the 20th, with one and three-fourth ($1\frac{3}{4}$) bushels to the acre, of the variety called Tea wheat, and well harrowed and rolled; harvested on the 15th August, and put into the barn as soon as it was well cured; thrashed with a machine on the 19th Dec., and cleaned by running twice through a good fanning mill, and weighed sixty-four (64) bushels. The sample presented is a fair sample of the whole crop.

Sixty-four bushels, 12*s*,		$96 00
Expenses of raising crop:		
Plowing one day,	$2 00	
Harrowing and rolling one day,	2 00	
Manure, one-half charged to this crop,	5 00	
Harvesting,	3 00	
Thrashing,	5 00	
Interest and taxes,	8 00	
		25 00
Net profit,		$71 00

HART MASSEY.

(Proofs as required by rules of Society.)

WINTER WHEAT.—TWO ACRES.—J. M. WATERBURY, HOUNDSFIELD, JEFFERSON COUNTY.

Statement of a crop of Winter Wheat.

Ground, gravelly loam; previous crop, barley; plowed from eight to ten inches deep; sowed on the 29th August; twenty loads manure applied on two acres, and harrowed in with the seed; two bushels of Soule's wheat sowed to the acre; harvested on the 20th July, thrashed with a machine, and measured in a sealed half bushel, eighty-six (86) bushels.

Eighty-six bushels of wheat at 12*s*.,		$129 00
Expenses:		
Plowing once,	$2 00	
Harrowing,	2 00	
Manure,	5 00	
Seed and sowing,	5 50	

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Harvesting and thrashing,.....	8 50	
Interest and taxes,.....	8 00	
		31 00
Net profit,.....		$98 00

JOHN M. WATERBURY.

(Proofs as required by rules of Society.)

WINTER RYE.—2 $\frac{12}{100}$ ACRES.—HIRAM CONVERSE, JEFFERSON COUNTY.

In the fall of 1852 (viz: 10th Sept.), sowed 2 $\frac{12}{100}$ acres of land on his farm in Pamelia, Jefferson county, with rye; used in sowing the same four bushels; harvested the same about the 15th July, 1853, and the yield therefrom was eighty-one bushels, measured in a sealed half bushel. The soil on which the same was raised was a clay loam; the crop previous, barley.

Plowing and preparing the soil, and sowing,.....	$4 50
Harvesting,.....	4 00
Thrashing with flail,.....	6 50
	$15 00
Cost of seed (4 bush. rye),.....	2 50
	$17 50
Estimating the rye at 7*s*. per bush.,.....	$70 87
Less expenditures as above,.....	17 50
	$53 37

HIRAM CONVERSE.

(Proofs as required by rules of Society.)

WINTER RYE.—THREE ACRES, THREE ROODS AND TWENTY RODS.—ELISHA W. BUSHNELL, COLUMBIA COUNTY.

The field upon which this crop of rye was grown, was an oat stubble. In the spring of 1851 this field was planted with corn, there was about twenty-five cart-loads of manure applied to the acre before plowing for planting. In the spring of 1852, it was sown with oats, and in the first week of Sept., 1852, it was plowed about seven inches deep, and on the 13th day of the same month

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it was sown with one and a half bushels of rye to the acre, and harrowed in; no manure applied since the corn crop.

The land was in a good state of cultivation, and the soil is a dark loam with some gravel. The farm is located on the line of the Harlem railroad, about forty miles from the city of Albany, in the town of Hillsdale, Columbia county.

The rye was harvested in the usual way, in the second week of July, 1853, and hauled into the barn; thrashed with a flail in the month of January, 1854, and cleaned with fanning mill; the yield was 163 $\frac{2}{16}$ bushels of rye from three acres, three roods and twenty rods. The rye was sold at the Hillsdale station, on the Harlem railroad, for $1.10 per bushel,..... $179 33
Seven hundred bundles of straw, at three cents per bundle,..... 21 00

$200 33

Expenses of cultivation:

Two and a half days plowing land, and team,...	$5 00	
Harrowing and sowing seed,.....	2 00	
Six bushels seed at eighty cents per bushel, ...	4 80	
Harvesting and thrashing,.....	25 00	
Carting to market,.....	2 00	
Interest on land, at $80 per acre,.....	21 70	
		$60 50
Profit,.....		$139 83

ELISHA W. BUSHNELL.

(Proofs as required by rules of Society.)

BARLEY—16 ACRES, 3 ROODS, 35 RODS—779 $\frac{22}{41}$ BUSHELS.—RILEY W. HESS, FENNER, MADISON COUNTY.

The soil on which said crop was raised, is a kind of gravelly loam with a little mixture of clay, excepting about one acre and a half, which is a black alluvial soil.

Previous crop, corn, planted on greensward, turned over in the spring of 1852; there was about 15 loads of coarse straw manure drawn on to the piece (without regard to condition of soil), previous to its being turned over for corn.

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In the spring of 1853, 16 or 18 loads of old rotten barnyard manure, was spread on the piece nearest to the barn from whence it was taken, it being drawn out for the purpose of getting it out of the way, more than for the immediate benefit of the crop; plowed once, harrowed down smooth by going over it once with the harrow; sowed on the 4th and 5th days of May, with two bushels two rowed barley (known as the double sett or Hess kind) per acre; harrowed twice and rolled; harvested the fore part of August, and yielded 779$\frac{22}{48}$ bushels by actual weight, which is about 45$\frac{44}{48}$ per acre.

CR.

779$\frac{22}{48}$ bushels of barley, at 65 cts. per bushel, ...	$506 05
Straw reckoned at two dollars per acre,.....	34 00
Whole value of crop, ...	$540 05

Expense of cultivation:

Eight day's plowing, at $2.50,.....	$20 00
One day harrowing, before sowing,.....	2 50
Thirty-four bushels of seed, at 5s, ...	21 25
Two day's sowing the same, at $1,.....	2 00
Two day's harrowing, after sowing, at $2.50,.....	5 00
One day rolling,.....	2 50
Two day's spent in weeding barley, at 75cts.,.....	1 50
Expense of harvesting, $2.50 per acre, ...	42 50
Expense of thrashing,.....	52 00
Cleaning once through fanning mill,.....	6 00
Drawing to market 10 loads at $1 per load, ...	10 00
Toll on plank road, 32 cts. each load,.....	3 20
Eighteen loads manure, at 50 cts per load,.....	9 00
Land rented at $5 per acre,.....	85 00
Whole amount of expense,.....	$252 45
Profit, ...	$287 60

The barley was sold early in the fall, for 65 cts. per bushel, would bring now 70 cts., which would swell the profit to $326.60

RILEY W. HESS.

(Proofs as required by the rules of the Society.)

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BUCKWHEAT, 1 ACRE 6 RODS.—CHARLES W. EELLS, WESTMORELAND, ONEIDA COUNTY.

The land upon which the buckwheat was raised, had been a meadow for several years. The soil is composed of gravel and loam, and in some places clay and sand. The condition of the soil was rather ordinary, not having any manure for several years. The last crop of hay was rather light, and the Canada thistle (that pest to the farmer), had nearly covered the ground in many places. My object in sowing buckwheat, was to kill the thistles. I plowed the land on the 21st and 22d of June, with a Michigan double plow, ten inches deep, and sowed it the 23rd. Cultivated it over once with a large steel tooth cultivator, and harrowed with a double harrow and rolled. The weather being very hot and dry, but very few thistles made their appearance again; and what did, looked as if they had the consumption, and needed a little cod liver oil or guano, to keep them alive.

I think by plowing the land three or four times, between the 1st of April and 1st of July, and sowing it again with buckwheat, the thistles will be entirely destroyed. The farm is located in the town of Westmoreland, Oneida co., N. Y., on an elevation inclining to the east, with a rolling surface.

The buckwheat was cradled the 28th of September, bound and set up one bundle in a place, and stood two weeks to dry; then drawn to the barn and thrashed immediately; cleaned in a good fanning mill. The piece produced thirty-two bushels, and twenty-six pounds, on one acre and six rods, being an average of thirty-one bushels and seventeen pounds per acre I sold the buckwheat to W. H. Healy, Clinton Mills, for fifty-eight cents per bushel.

Expense of cultivation:

1¼ day's plowing, at $2,	$2 50
½ day harrowing, at $2,	1 00
¾ bushel seed, at 50 cts.,	0 38
1 day cradling and binding,	1 00

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Thrashing and drawing,	1 50
Interest on land at $40 per acre,	2 80
	$9 18

Value of crop:

By 32 bushels and 26 pounds, at 58 cts,	$18 87
By straw,	1 00
Total value of crop,	19 87
Total expense of crop,	9 18
Profit,	$10 69

CHARLES W. EELLS.

Westmoreland, Dec, 28, 1853.

(Proof as required by the rules of the Society.)

INDIAN CORN—2 55-100 ACRES, 73 1-3 BUSHELS PER ACRE—E. S. HAYWARD, BRIGHTON, MONROE COUNTY.

The soil is various, some gravelly, some loam and some black muck with a clayey subsoil and all more or less stony; side hill sloping gradually to the east. The crops for four years previous, have been one of potatoes, two of wheat, and the last year pasture. The ground was plowed and subsoiled the 11th, 12th and 13th of May; the plow used Eagle No. 20, with two teams, and No. 2, subsoil, of Ruggles, Nourse & Mason's make; plowed from 8 to 10 inches, and subsoiled 4 or 5 more, and had a man follow the subsoil, to throw out and dig stones. The 17th of May rolled with a heavy iron roller. The lot was well manured before plowing, 25 loads per acre, and after rolling, 20 loads more per acre put on top and cultivated in the 24th of May; furrowed with a plow, both ways, about 3 feet apart, 30th and 31st of May; corn planted 31st May and first of June, with the 12 rowed Canada improved; 5 or 6 kernels in a hill and 4 or 5 allowed to stand; in 4 or 5 days the corn began to appear in sight; June 15th commenced cultivating and cultivated it both ways; 22d commenced hoeing; cultivated 2nd time both ways, 1st and 2d week in July, and hoed 2d time 2d week; cut it up at the roots Sept'r 12, 13 and 14; bound in bundles and set 8 or 10 bundles together, and let it stand 2 or 3 weeks and hauled it off and reset in bunches, and husked it in November.

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The crop of corn which I offer for a premium, is a part of a field of six acres. Most of the manure put on three acres, and the remaining three without any manure. The corn was equally sound on the whole piece, and the part manured yielding not more than 10 or 11 bushels corn more per acre than the remainder. The weather was very dry, part of the season, and the corn suffered much from the effects of the drought. The manure did not do the good, in my opinion, that it would had the season been wetter; the severest time was about earing time, which made the ears less in number and shorter, and it did not fill as well as it ought. I have charged a good deal of extra work to the crop, which was done to fit the ground for a succeeding crop. The stalks were very tall and heavy, some of them measuring 9 feet. My expense of cultivating the crop is large; my corn costing on this piece 27 cts. per bushel of ears. After deducting all expenses of cultivating, and fourteen dollars per acre for the use of the land, there is a profit of nearly 20 dollars per acre, and, what is still better, the soil is in fine condition for two or three crops more.

Expense of raising corn crop:

Hauling manure,.....	$6 81
Plowing, spreading manure and digging stones,.....	6 00
Hauling stones off the ground,.....	1 50
Rolling, harrowing and cultivating,.....	1 50
Furrowing,.....	1 00
Cultivating, one horse, 1st time,.....	1 25
Hoeing, 1st time,.....	3 75
do. 2d time,.....	2 50
Cultivating, 2d time,.....	1 25
Planting,.....	1 50
Seed 12 qr.,.....	25
Manure, 112 loads at 2 s.	28 00
Interest on land,.....	35 00
Husking, shelling and marketing, at 6 cts.,.....	11 16
Cutting and binding, ...	2 00
	$103 47

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By 186½ bushels corn, at 70 cts.,	$130 55
By stalks,	20 00
	$150 55
Net profit,	$47 08

(Proof as required by the Society.)

INDIAN CORN, IRA APTHORP, RIGA, MONROE COUNTY.—2 ACRES, 183 $\frac{10}{100}$ BUSHELS.

The piece of ground on which my crop of corn was raised, was meadow; had laid in grass six years; no manure used of any kind; the soil is a clay loam; plowed about the 16th of May, 10 inches deep, the furrow a little lapped; rolled and harrowed lengthwise of the furrows, until completely pulverised; marked both ways 3½ feet a part; planted on the 23d day of May; the 8 rowed yellow corn was used, and from 5 to 7 kernels in a hill; cultivated with a corn cultivator three times, and hoed once by the 13th day of June; about the 1st of July cultivated twice, then plowed two furrows in row one way with a shovel plow and hoed. Corn cut up by the roots the first of September, and husked in November; and the product was 13,735 lbs. or 183 bushels, 10 lbs, on two acres of land, allowing 75 lbs. of ears for a bushel of corn.

Expense of crop:

To two day's plowing,	$4 00
Rolling and harrowing,	2 00
Marking and planting,	2 00
Cultivating,	2 50
Plowing among corn,	50
Hoeing,	4 00
Cutting up, $2, husking, $4,	6 00
Seed corn,	75
Interest on land, at $80,	11 20
	$32 95

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Cr. by 183 bush. 10 lbs. corn, at 6s. per bushel, ...	$137 37
By four loads stalks,.....	8 00
	145 37
Expense,.....	32 95
	$112 42

Leaving a profit of $112.42 in favor of the corn.

IRA APTHORP.

(Proof as required by the rules of the Society.)

INDIAN CORN, 2½ ACRES, 218 BUSHELS, 16 QUARTS.—GEORGE K. ELLS, KIRKLAND, ONEIDA COUNTY.

The farm is located one mile west of Clinton village, on an elevation inclining to the east; the soil is a sandy loam, in good condition; the land on which my corn was raised, was in meadow about 15 years. In the spring of 1852, I spread about 15 loads of barn yard manure per acre, and plowed it in eight inches deep, planted it with corn and potatoes; last spring, spread about the same quantity of barn yard manure, and plowed it in 10 to 12 inches deep, with P. Aulds' ne plus ultra plow, drawn by two horses; we think deep plowing the great secret of farming; harrowed the land with a fine toothed harrow; marked it out one way with a marker; planted across the marks, rows 3¼ feet apart each way; planted with twelve rowed Dutton corn the 25th and 26th days of May, 4 to 6 kernels in a hill (about 6 quarts of seed per acre). On the 1st of June, the corn was up; it was cultivated and hoed about the middle of June, and thinned to 4 stalks in a hill; cultivated and hoed again about the 1st of July; about the 10th of September, the corn was cut up and stacked, with 9 hills in a stack (I think there was not 10 hills missing in the whole eight acres); the corn was husked about the 1st of October, and spread on a slat floor about 18 inches deep, over my wagon house, where it became thoroughly dry. We shelled the corn between the 25th of December, and the 2d of January; cleaned, measured and weighed it the same week; sold the corn at the New Hartford mills, at 75 cents per bushel; the whole eight acres was cultivated precisely alike, and would yield nearly equal to the 2½ acres which we surveyed for the premium. The

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following is the expense of cultivation of the two and one half acres:

To 37½ loads of manure, at 50 cts,	$18 75
To spreading the same, 1 day,	75
To 2 day's plowing and 1 day harrowing, at $2,	6 00
To two day's with cultivator, 16 quarts of seed 12s,	3 50
To 5 day's planting, at 75 cts,	3 75
To 14 day's hoeing, at 75 cts,	10 50
To 9 day's cutting up,	6 75
To 15 day's husking and hauling corn,	11 25
To 1 day hauling stalks,	2 00
To 9 day's shelling, cleaning and measuring, at 5s,	5 63
To 3 day's hauling to market,	6 00
To interest on land at $80 per acre,	14 00
	$88 88

Cr. by 10 loads stalks at 20s,	$25 00
Cr. by 218 bush. 16 pounds corn,	153 60
Value of crop,	$178 60
Expense of cultivation,	88 88
Profit on the whole crop,	$89 72

GEORGE K. EELS.

(Proofs as required by the rules of the Society.)

PEAS—1 ACRE, 3 RODS, 5 RODS, 74½ BUSHELS—NOAH HITCHCOCK, JR., HOMER, CORTLAND COUNTY.

Soil most of it a gravelly loam; previous crop corn, planted on greensward, a part of it lightly manured; no manure the present season; plowed once from 6 to 7 inches deep; sowed broadcast 6 bushels of June peas the last of April, and covered them with a harrow; harvested with scythe; cleaned with common fan mill.

Whole amount of crop, seventy-four and one-half bush., at 9s.,	$83 31
Value of straw,	5 00
	$88 31

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Expenses of getting in crop,.....	$4 00	
Seed, 6 bushels at 9s.,.....	6 75	
Harvesting, thrashing and cleaning,.....	10 00	
		20 75
Profits, ...		$67 56

NOAH HITCHCOCK, Jr.

(Proofs as required by the Society.)

PEAS—ONE ACRE AND 61-100TH OF AN ACRE, 88 BUSHELS—JAMES W. JOLLEY, COEYMANS, ALBANY COUNTY.

The previous crop was Indian corn, manured in the hill, in a clover ley of three years. The soil, a deep loam; subsoil sand, with occasional layers of clay; no manure on the crop of peas. The quantity of seed used was four bushels of peas, and 1½ bush. of oats; seed, the common field pea; sowed 19th of April, and harvestsd the second week in August—yield 88 bushels.

Expenses cultivation:

Plowing,.....	$1 50
Harrowing,.....	50
Harvesting and thrashing,.....	5 00
	$7 00
Value of product at 65 cts. per bushel,.....	$57 20
	7 00
	$50 20

The value of straw equal to the interest of the value of the land.
(Proofs as required by the Society.)

BEANS—ONE ACRE, TWELVE RODS, 30½ BUSHELS—DAVID COONRADT, BRUNSWICK, RENSSELAER COUNTY.

Previous crop, potatoes; manured with 25 ordinary wagon loads of unfermented manure; no manure used in the present crop; soil gravelly loam; eighteen quarts of common small white beans used for seed; planted first of June, in drills 22 inches

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apart; harvested the 12th of October; left in the field to dry one week; taken to barn and thrashed in December; yield 30½ bushels; marketed at Troy, at $1.00 per bushel; owing to wet weather, the beans were partially injured, or the price would have been larger.

Expense:

Plowing, one day,	$2 00
Seed,	1 12
Planting, two days,	1 25
First hoeing, 1½ days,	1 00
Second hoeing,	1 00
Cutting, 2 days,	1 25
Drawing to barn,	0 50
Thrashing and cleaning, 2½ days,	1 50
Interest on land, at $80.00,	5 60
	$15 22
Produce sold, at	$30 50
Value of straw,	5 00
	$35 50
	15 22
	$20 28

(Proof as required by the Society.)

CARROTS — HALF AN ACRE — N. & E. S. HAYWARD, BRIGHTON, MONROE COUNTY.

Statement of the manner of cultivating the crop of carrots, that we offer for competition.

The soil is a yellow loam, very little inclined to sand. The previous crop was potatoes planted without manure; the crop before, wheat, and before that, potatoes; the ground was plowed late in the fall, by turning two furrows together, forming a ridge. In the spring cultivated across the ridges; 14th May plowed and subsoiled; 17th hauled on the manure and spread evenly over the surface, 35 loads; 25th commenced plowing second time and

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raked ready for sowing, as fast as plowed. The next day was very rainy, and wet for several days, which prevented sowing till the fourth of June; the ground after so much rain was quite hard, so much so, that we almost gave up sowing, but concluded to cultivate it over and sow; the manure prevented plowing again. The carrots came up quite thinly, and the ground was hard, so that the plants were some time in starting. After the ground was cultivated we marked it out 14 inches apart with a marker, making four rows at a time, the seed was sprouted before sowing and mixed with plaster enough to separate it for sowing, and then sowed by hand, with the orange and white variety, at the rate of 4 lbs. per acre, and covered by passing the rake over the ground sown. Soon as the plants could be seen, the hoe was passed between the rows lightly, to kill the weeds, and in a few days again hoed and wed and then hoed deep to loosen the soil as much as possible; in due time they were thinned properly, say, from 4 to 6 inches usually, but, as ours were thin in spots, we were not very exact. The crop was kept clean from weeds the remainder of the summer and at harvest not a weed could be found. Harvested by digging with a spade, and topping with a knife, November 12th and 14th, and carted to the cellar. The tops were very rank and made excellent feed for cattle and, all carefully fed out, as wanted.

Statement of the expense of raising a crop of carrots, cultivated by N. & E. S. Hayward, Brighton, Monroe County, N. Y.; yield 378 bushels, per half acre crop.

Plowing, subsoiling, harrowing and cultivating,.....	$5 00
Hauling off stones,.....	1 50
Hauling manure,.....	2 50
35 loads manure at 4 *s.*,.....	17 00
Plowing, 2nd time, and spreading manure,.....	1 50
Raking ground and sowing,.....	2 00
2 lbs. seed,.....	1 00
Hoeing, weeding and thinning,.....	6 00
Interest on land, ...	7 00
Harvesting and storing,.....	6 00
	$58 50

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By 378 bushels at 2 *s.*, ...	$94 50
Net profit, ...	$36 00

NATHANIEL HAYWARD,
EDWIN S. HAYWARD.

(Proofs as required by the Society.)

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POTATO EXPERIMENTS, 1853.

REPORT OF COMMITTEE.

To the Executive Committee of the State Ag. Society:

The undersigned, a committee upon "experiments in the cultivation of potatoes," respectfully report, that five individuals made reports upon the experiments they had made in the cultivation of the potato, in 1853, and asked a premium therefor, to wit: H. H. Eastman, of Marshall, Oneida co.; Volney Burgess, of Chatham, Columbia co.; J. B. Morse, of Cazenovia, Madison co.; N. Culver, of Arcadia, Wayne co.; L. L. French, of Warren, Herkimer county.

The committee do not think they can do the society and the farming community a better service in relation to Mr Eastman's report, than to give it complete and recommend its publication. A report of a valuable series of experiments made by him in 1852, is already before the public. [Vide Trans. 1852, p. 342.]

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DETAILS OF AN EXPERIMENT ON

By H. H. EASTMAN, of

THE VARIOUS EXPERIMENTS.	Different rows in each experiment relatively.	Variety of potatoes used for seed.	Weight of seed.	Condition of seed when used.	With and without manure, and how applied.
Different manures in the hill, and no manure:	No manure,	Irish lunkers, red,	9½ lbs	Whole tuber,	No manure,
	Hog manure,	do	9½	do	In the hill,
	Long unfermented,	do	9	do	do
	Compost,	do	9½	do	do
	Guano,	do	9½	do	do
	Poudrette,	do	9	do	do
	Superphosphate lime,	do	9	do	do
	Wheat brand,	do	9	do	do
	No manure,	Mercer or Phila.,	7½	do	No manure,
	Hog Manure,	do	7	do	In hill,
	Long unfermented,	do	7	do	do
	Compost,	do	7	do	do
	Guano,	do	7	do	do
	Poudrette,	do	7	do	do
	Superphosphate lime,	do	6¾	do	do
	Wheat brand,	do	7	do	do
	No manure,	Carter potato,	7	do	No manure,
	Hog manure,	do	7	do	In hill,
	Long unfermented,	do	7	do	do
	Compost,	do	7	do	do
	Guano,	do	7	do	do
	Poudrette,	do	7	do	do
	Superphosphate lime,	do	7	do	do
	Wheat brand,	do	7	do	do
Fermented or rolled manure:	In the hill,	Irish lunkers, red.	7	Whole tuber,	In hill,
	Top of hill,	do	7	do	Top hill,
	In hill,	Mercer or Phila.,	7	do	In hill,
	Top of hill,	do	7	do	Top of hill,
Manure of fowls:	In hill,	Irish lunkers, red,	7	Whole tuber,	In hill,
	Top hill when planted	do	7	do	Top hill,
	In hill,	Mercer or Phila.,	7	do	In hill,
	Top hill,	do	7	do	Top hill,
Ashes in hill, and top of hill, after potatoes are up:	In hill,	Irish lunkers, red,	9	Whole tuber,	In hill,
	Top hill,	do	9	do	Top hill,
	In hill,	Mercer or Phila.,	7	do	In hill,
	Top hill,	do	7	do	Top hill,
Lime in hill, and top of hill after potatoes are up:	In hill,	Irish lunkers,	7½	Whole tuber,	In hill,
	Top hill,	do	7½	do	Top hill,
Gypsum in hill, and top of hill after potatoes are up:	In hill,	Irish lunkers,	7	Whole tuber,	In hill,
	Top hill,	do	7	do	Top hill,
Early, medium, and late planting; soil, light and mucky:	Planted 7th May,	Irish lunkers,	7½	Whole tuber,	
	Planted 30th May,	do	7½	do	
	Planted 18th June,	do	7½	do	
Large, medium, and small seed:	Large,	Irish lunkers,	14¾	1 whole in hill,	
	Medium,	do	6¾	do	
	Small,	do	3	do	
	do	do	6	2 in hill,	
	do	do	12	4 in hill,	
Large potatoes, cut and uncut for seed:	Large,	English whites,	11½	Whole tuber,	
	do halved,	do	11½	Two halves,	
	do do	do	6	One-half,	
	do quartered,	do	11½	Four quarters,	

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RAISING POTATOES, IN THE YEAR 1853.

Marshall, Oneida Co., N. Y.

Quantity of manure used.	Weight of produce in sound condition. lbs. oz.	Bushels of sound produce pr acre	Wt of produce in unsound condition. lbs. oz.	Bush of unsound produce pr acre	Aggregate bu. of produce pr acre	REMARKS.
.....	36.11	116 bu	.06	1 bu	117 bu	Medium size; fair.
½ shovelful, ...	70.10	228½	8 04	26½	255	Large; uniform; worm-eaten.
½ do	41 10	134½	6 06	20	154½	Medium size.
½ do	51.10	166	5.10	17½	183½	Fair.
Table-spoonful, ...	51.02	166	1.14	6	172	Medium size; seed injured by guano.
Half handful, ...	47.02	153½	3.	9½	163	Medium size.
Table-spoonful, ...	51.10	166½	.15	3	169½	do do
Handful, ...	46 02	148½	Sound.	.....	148½	do do
....	22.02	70½	.09	1½	72½	Small in size.
½ shovelful, ...	35.10	115	4 14	15½	130½	Large, and uniform in size.
½ do	28.10	96½	3.14	8½	104½	Medium size.
½ do	26.04	84½	1.08	4½	89½	do do
Table-spoonful, ...	26 10	85½	.09	1½	87	Large; seed injured by guano.
Half handful, ...	26.10	86	1 02	3½	89½	Medium size.
Table-spoonful, ...	28.10	92	1.08	4½	96½	Small.
Handful, ...	28.02	91	1.11	5½	96½	Medium size.
.....	40.10	132½	1.02	2	134½	do do
½ shovelful, ...	80.12	260½	6.12	21½	282	Large size.
½ do	41.10	134	14.02	45½	179½	Rough exterior.
½ do	21 10	69	26.	83½	152½	Medium; smooth.
Table-spoonful, ...	32.	103½	9.12	31½	134½	Seed injured by guano.
Half handful, ...	33 10	108	12.	38½	146½	
Table-spoonful, ...	38 10	125	4.05	13½	138½	Medium size.
Handful, ...	45.10	147½	1.02	3½	150½	Large size.
½ shovelful, ...	52.10	169½	.09	1½	171	Large, and uniform and even.
do	51.10	166½	1.02	3½	170	Large and good.
do	29.10	95½	1.02	3½	99	do do
do	24.02	77	1.02	3½	80½	do do
Handful, ...	43.10	140½	Sound.	.....	140½	Good size, and smooth.
do	41.02	133	.06	1	134	do do
do	22.02	70½	1.11	5½	75½	do do
do	23.10	74½	.06	1	75½	do do
½ handful, ...	44.10	143½	Sound.	.....	143½	Large and fair.
do	38.10	124	do	.....	124	Medium size.
do	26.	84	.06	1	85	do do
do	29.	93½	Sound.	.....	93½	Large and fair.
½ handful, ...	36.	116	.09	1½	117½	Medium and fair.
do	33.10	108	Sound	.....	108	do do
Table-spoonful, ...	32.02	103	1.02	3½	106½	Fair; medium size
do	32 06	103½	1.08	4½	108	do do
.....	36.06	117	1.11	5½	122½	Fair; medium.
.....	25 06	75	Sound.	.....	75	Smaller.
.....	11.10	37	do	.....	37	Very small.
.....	43.06	139½	.03	½	139½	Large and good.
.....	23 06	75½	Sound.	.....	75½	Medium.
.....	18.06	59	do	.....	59	Small.
.....	23.14	76	do	.....	76	do
.....	33.06	107½	do	.....	107½	do
.....	46.10	150½	.12	2½	152½	Good; medium.
.....	48.06	156	Sound	.....	156	do do
.....	32.06	104	do	.....	104	do do
.....	48.14	157	do	.....	157	Small.

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EXPERIMENT.—

THE VARIOUS EXPERIMENTS.	Different rows in each experiment, relatively.	Variety of potatoes used for seed.	Weight of seed.	Condition of seed when used.	With and without manure, and how applied.
Various mineral manures:	No manure, ...	Irish lunkers,....	7½ lbs	Whole tuber,	.....
	Sulphur,.....	do	8	do	Top of hill when planted
	Saltpetre,.....	do	7½	do	do
	Gypsum, ...	do	7	do	do
	Guano, ...	do	7	do	do
	Poudrette, ...	do	7	do	do
	Superphosphate lime,	do	7½	do	do
	Charcoal,.....	do	8	do	do
Early, medium, and late planting; soil, gravelly loam:	Planted 9th May,....	Irish lunkers,....	7½	Whole tuber,	.....
	Planted 30th May,...	do	7½	do	.....
	Planted 18th June,...	do ...	7	do	....
Compost, fresh or unfermented manure in hill. and spread broadcast. 36 hills forming a square:	Compost, ...	Irish lunkers,....	8	Whole tuber,	In hill.....
	do	do	8	do	Broadcast,..
	Unfermented, ...	do	8	do	In hill.....
	do	do	8	do	Broadcast,..

The ground upon which the above potatoes were planted was green sward, plowed early in the spring, eight inches deep. Soil, except as otherwise stated, mucky; planted 7th May, except as otherwise stated. Hoed twice; last time slightly hilled. The cultivation, both in point of time and manner, was intended to be as nearly alike as possible. Taken from the ground about 12th Oct.; the long continuous rains of Sept. and Oct. prevented their removal from the ground sooner. The vines were all dead before any frost. Those of the same varietv, and same time of plant-

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(CONTINUED.)

Quantity of manure used.	Weight of produce in sound condition. lbs. oz.	Bushels of sound produce pr acre	Wt. of produce in unsound condition. lbs. oz.	Bush. of unsound produce pr acre.	Aggregate bu. of produce pr acre	REMARKS.
.....	24.06	78½	Sound.	.....	78½	Medium size.
Tea-spoonful, ...	26.06	84⅞	do	.....	84⅞	do do
do	23.10	75⅞	do	.....	75⅞	do do
Table-spoonful, ...	26.14	86	do	.....	86	do do
do	46.14	151½	1.08	4⅞	156	Large and good; seed injured.
Half handful, ...	34.06	110½	.12	2½	113	Medium; fair.
Tea-spoonful, ...	34.06	110⅞	Sound.	.....	110⅞	do
Handful, ...	32.06	104	do	.....	104	Good.
.....	32.06	104	Sound.	.....	104	Fair; medium size.
.....	23.14	70	do	.....	70	Small.
.....	14.	45	do	.....	45	Very small.
Half shovelful, ...	67.10	151½	3.03	7	158½	Large and fair.
Double quantity, ...	54.06	122	1.08	3½	126½	Large.
Half shovelful, ...	61.06	137½	.12	1½	139	do
Double quantity, ...	65.14	147½	.12	1½	149	Large and fair.

ing, commenced dying simultanously; Mercers or Philadelphias, and Irish Lunkers, first; English Whites, and Carters, last. The vines of the early, medium, and late planting, commenced dying at about the same age. Those varieties, the vines of which held green longest, were the most decayed when taken from the ground. All the rows, except as otherwise stated, consisted of twenty-five hills each, three feet apart each way.

H. H. EASTMAN.

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To avoid making the report too voluminous, the committee take the liberty to abridge the other reports, giving such parts as are answers to the inquiries of the Executive Committee.

Volney Burgess, of Chatham, Columbia co., variety of potatoes planted was "Mountain June;" soil, gravelly loam.

150 hills;	seed 36 lbs. or 3⅔ oz. to hill;	time of planting	April 12;	yield, 633 lbs=17 11-30 to 1.
do	do	do	May 5;	yield, 574 lbs=16 to 1.
do	do	do	June 6;	yield, 522 lbs=14¼ to 1.

Different kinds of soil; 25 hills planted; 3⅔ oz. to hill.

Dry loam;	6 lbs. seed to 25 hills;	time of planting	April 12;	yield, 156 lbs=26 to 1.
do	do	do	May 5:	yield, 152 lbs=25 2-6 to 1.
do	do	do	June 6;	yield, 135 lbs=22½ to 1.
Moist loam;	do	do	April 12;	yield, 155 lbs=25 5-6 to 1.
do	do	do	May 5;	yield, 144 lbs=24 to 1.
do	do	do	June 6;	yield, 126 lbs=21 to 1.
Wet loam;	do	do	April 12;	yield, 118 lbs=19 4-6 to 1.
do	do	do	May 5;	yield, 75 lbs=13½ to 1.
do	do	do	June 6;	yield, 57 lbs=9½ to 1.
Dry gravel loam,	do	do	April 12;	yield, 95 lbs=14 1-6 to 1.
do	do	do	May 5;	yield, 94 lbs=13 to 1.
do	do	do	June 6;	yield, 90 lbs=12 to 1.
Moist gravel loam,	do	do	April 12;	yield, 79 lbs=13 1-6 to 1.
do	do	do	May 5;	yield, 75 lbs=12½ to 1.
do	do	do	June 6;	yield, 78 lbs=13 to 1.
Wet muck,	do	do	April 12;	yield, 30 lbs=5 to 1.
do	do	do	May 5;	yield, 39 lbs=6½
do	do	do	June 6;	yield, 36 lbs=6.

Manner of seeding; 25 hills for each experiment; planted May 5.

First experiment;	2 large ones in hill;	weight	8 oz;	yield	138 lbs=23 to 1.
Second do	2 medium ones in hill;	do	4 oz;	do	97 lbs=16 1-6 to 1.
Third do	2 small in hill;	do	2 oz;	do	79 lbs=13 1-6 to 1.
Fourth do	l'ge potatoes, cut 2 piec's in hill,	do	4 oz;	do	125 lbs=20 5-6.

Different kinds of manure; 25 hills planted May 5th, 4 oz. seed to hill.

Long yard manure	in hill;	yield	89 lbs=13 3-6 to 1.
do do	harrowed in,	do	94 lbs=15 4-6 to 1.
do do	plowed in,...	do	90 lbs=15 to 1.
Rotten do	in hill,.....	do	93 lbs=15¼ to 1.
do do	harrowed in,.	do	89 lbs=14 5-6 to 1.
Manure from hog pen, (not stated how applied,)	.....	do	108=lbs 18 to 1.
Plaster in hill,...	.....	do	78 lbs=13 to 1.
do on vines after up,.....		do	70 lbs=11 4-6 to 1.

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Lime in hill,	yield 72 lbs=12 to 1.	
do on vines,	do 71 lbs=11 5-6 to 1.	
Dry ashes in hill,	do 90 lbs=15 to 1.	
do on vines,	do 108 lbs=18 to 1	
Leached ashes in hill,	do 88 lbs=14 4-6 to 1.	
do on vines,	do 106 lbs=17 4-6 to 1.	
Poultry manure in hill,	do 68 lbs=11 2-6 to 1,	½ pint in hill, (too much, committ.

None diseased in any of his experiments worthy of notice, except on the wet land. Mr. Culver cut a large potato weighing 12 ounces, called the "peach blow" into as many pieces as there were eyes, and planted each in a hill, and produced 66 $\frac{5}{16}$ lbs., a trifle more than a bushel, giving renewed evidence that the large potato may be so divided as to cover a great deal of ground and do well.

J. B. MORSE, OF CAZENOVIA, MADISON COUNTY.

Variety.	Time of planting.							
Door-yard potato,	April 19	21½ bush.	seed p. acre,	yield p. acre.	251	66 bush.	disease	11.7
do	May 16,	do	do	do	156	do	do	17.7
do	June 11.	do	do	do	91½	do	do	57
Mount'n Jun. early,	April 19,	do	do	do	225	do	do	none.
do	May 16,	do	do	do	140	do	do	20
do	June 11,	do	de	do	96½	do	do	38

These were planted on oat stubble, and 24 loads of 30 bushels each of stable manure, plowed in 6 inches deep.

Different mode of seeding.

No. 1. One small one in hill	4.6	b'sh. p. a.	yield 120	b. p. a.	disease	12½	b'h.
2. One large one in hill, whole,	31.66	do	150	do	do	22.2	do
3. One medium sized, whole,	16.66	do	141.6	do	do	24.6	do
4. One medium sized, cut in 4 pieces,	16.6	do	148.3	do	do	28	do
5. Rather large, cut in 4 p's, 2 in hill,	13.2	do	173.3	do	do	26.9	do
6. Seed end of a medium size,	7.5	do	133.3	do	do	33.7	do
7. Root end of last lot,	9.1	do	108.3	do	do	30.7	do
8. Single eyed, 5 in hill,	10.	do	96.6	do	do	25.6	do

He remarks of the sizes of potatoes produced as follows: No. 1, remarkable even and fair size; No. 2, more than half too small to be marketable; No. 3, greater part fair size; No. 4, a great many small ones; No. 5, fair sized, good; No. 6, very good; No. 7, like the last; No. 8, tops looked feeble, but potatoes tolerable.

This experiment was made upon sod, turned upon stiff clay loam; 25 loads of horse manure to the acre, spread after plowing

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and harrowed in. He says, the cut seed threw up more in number, but weaker plants than the whole seed, in proportion to amount of seed.

Different kinds of manure and differently applied.

Soil, clay loam, sod turned just before planting; variety of potatoes, the "door yard;" cut larger ones into 3 or 4 pieces, and smaller ones into 2; putting 2 pieces in a hill; making about 14 bushels per acre.

	Cost of manure per acre charged.	Yield per acre.	Cost potato per bush.	Per c't dis'ed.
No 1, hog manure half rotted, spread on top and harrowed in, 24 loads per acre, half charged to crop, ...	$6 00	205 bush.	12.2 cts.	23.5
No. 2, same as above in hill,.	6 50	216.6	12.2	27
No. 3, horse manure on top, 24 loads, ...	6 00	196.6	13.2	25.4
No. 4, same as above in hill,..	6 50	206.6	12.3	19.3
No 5, saw dust used for litter under horses, half manure, 30 loads harrowed in, ...	7 50	225	12.2	24.2
No. 6, same as above in hill, .	8 00	206.6	13.6	21.7
No. 7, rotted yard manure, 24 loads, spread, ⅔ charged to crop, ...	8 00	213.3	13.1	19.5
No. 8, same as above in hill, .	8 50	118.3	13	18.3
No 9, hen manure in hill, 500 lbs. per acre, dry, valued $1.25 per cwt., ¾ charged, worth to apply, 4s,.....	5 18	216.6	11.6	20
No 10, home made poudrette, night soil dried with coal dust and plaster, ...	4 50	248.3	9.4	15.4
No 11, bones dissolved in acid, 200 lbs., ...	9 00	226.6	12.8	15.8
No. 12, plaster, 3 bushels per acre, ...	0 60	206.6	10	20.1

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	Cost of manure per acre charged.	Yield per acre.	Cost potato per bush.	per cent diseased.
No. 13, ashes, 12 bushel per acre, ...	1 50	208.3	10.3	25.6
No. 14, lime, 10 bushel per acre, ...	1 80	233.3	9.3	12.8
No. 15, charcoal dust and plaster, 2 bushel each, ...	66	198.3	10.4	16
No. 16, no manure, ...	....	153	13	19.5

The manure is charged at its value in the neighborhood, adding cost of applying. He charges $1 per day for planting and hoeing, and 88 cts for digging, and $2 for team and man; making the cost, he says, $20 per acre, besides manure.

With Plaster and Ashes.

	Yield per acre. Bushels.	diseased per cent.
No. 1, plaster in hill, 3 bushel per acre, ...	171.6	18.4
No. 2, plaster on vines, 6 inches high, 3 bushel,	158.3	46.3
No. 3, 4 bushel ashes in hill, per acre, ...	123.3	25.6
No. 4, top dressed with ashes as above, ...	120	27.7
No. 5, no manure, ...	115	34.8

Mr. Morse made an experiment with mulching, with 100 loads of straw per acre, from the stack yard, mixed with manure, from the cattle lying upon it. Soil, a stiff clay loam; planted 21st May, 10 bushels long pinkeyes seed, per acre; did not hoe them at all; hoed those not mulched, twice; the mulched part gave 196.6 bushels per acre; those not mulched 160; the former had 1.7 per cent diseased; the latter, 14 4 per cent; cost of the sound potatoes about the same, as the mulched, charging the straw at 25 cents per load, of 40 bushels and one-half to the crop.

A. CULVER, ARCADIA, WAYNE COUNTY.

The soil used was a light sandy loam. The variety of the potato planted, was the Mercer, using the larger potatoes and cutting lengthwise into four parts, and putting three parts in a hill, making 3 2-3 oz. to a hill, or 1 lb. 6 oz. for 6 hills, that being the number of hills for each experiment.

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The committee here remark, that they would have regarded the experiments more valuable, had the quantity planted in each been greater. The premiums offered were liberal enough to justify the executive committee in expecting experiments to the extent of from 50 to 100 hills each. An experiment upon a less quantity than that, would be too liable to be affected by accidental causes, to be relied upon, to settle a principle in cultivation.

Time of planting, and different manuring embodied in one table.

	Experiments,	planted	May 3.	May 17.	June 1.
			lbs. oz.	lbs. oz.	lbs. oz.
No. 1.	Coarse manure, plowed in 6 hills,	yield,	20.10	20.05	14.01
2.	Same manure harrowed in,	do	23.10	21.08	12.09
3.	Fine yard manure, do	do	26.06	17.09	11.14
4.	Same, plowed in,	do	21.08	17.00	12.05
5.	Leached ashes, 1 qt., in hill,	do	15.06		
6.	Plaster, handfull in hill,	do	25.00		
6.	do do on vines,	do	20.08		
7.	Fine yard manure, shovel full in hill,	do	23.00	20.04	10.00
8.	Coarse do on seed,	do	27.10	17.08	11.04
9.	Hen manure, 1 pt. in hill,	do	20.04		
9.	do on vines,	do	22.12		
10.	Charcoal, 1 quart in hill,	do	20.00		
11.	Coarse hog manure, one fork full in hill,	do	26.08		
12.	Air slaked lime, one pt. in hill,	do	18.14		
12.	do on vines, after up,	do	19.02		
13.	Fine yard manure, on hill, after planting,	do	23.10		
14.	Coarse do do do	do	19.10		

Manner of seeding.

Soil light sand loam, horse manure spread upon the land and plowed in; quantity not given; six hills in each experiment.

	Experiments.		lbs. oz.	
No. 1.	Large potato, cut in 4 p's, 3 p's in hill, 3 2-3 oz. to hill,	yield	23.04=276	bush. p. acre.
2.	do one in a hill, do	do	23.04=276	do
3.	Medium size, 1 in hill, weight 2 2 3 oz.	do	17.12=211	do
4.	Medium size, halved, 2 pieces in hill, weight 2 2.3 oz.	do	17.00=202	do
5.	Small ones, 2 in hill, weight 8 oz. for 6 hills,	do	19.00=226	do
6.	Small ones, halved, 3 pieces in hill, do	do	17.10=209	do

Mr. Culver reports no diseased potatoes, as he says, none were found when he took out his crop; owing, undoubtedly, to the character of his soil, *a light sand loam*, where the potato has uniformly escaped the rot more than in any other.

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In relation to the report of Mr. French, Warren, Herkimer Co., it does not comply with the requirements of the society in its details, nor in the accuracy or extent of his experiments, and nothing is awarded to him.

Different results are shown from the same experiments by different men, in different localities, and on different soils. This was expected; for instance, in a soil abounding in potash, the application of ashes will produce but little effect, whilst in a soil deficient in that element, the effect will be tremendous; so of lime and of plaster; but it will be found, by comparing these reports, that many valuable points are fully established.

The difference between early and late planting, in the yield of the crop and the escape from the disease, although varying in extent in different cases, shows, beyond all controversy, a great advantage in the early planting.

The proportions from the experiments of the several gentlemen are as follows, with the dates of their planting.

H. H. EASTMAN, OF ONEIDA.

	Planted, May 7.	May 30.	June 18.
	lbs. oz.	lbs. oz.	lbs. oz.
Yield from same number of hills,	36.6	25.6	11.10

VOLNEY BURGESS, OF CHATHAM, COLUMBIA COUNTY.

	Planted, April 12.	May 5.	June 6.
	lbs.	lbs.	lbs.
Average yield from 7 exper's, on differ't soils,	1,296.	1,153.	1,044.

J. B. MORSE, OF MADISON COUNTY.

	Planted, April 19.	May 16.	June 11.
Average of 2 experiments in yield,	476 lbs.	296 lbs.	188 lbs.
The percentage of disease as follows:	11.7 "	18.8 "	47.5 "

A. CULVER, OF ARCADIA, WAYNE COUNTY.

	Planted, May 3.	May 17.	June 1.
	lbs.	lbs.	lbs.
Aver'e yield of 6 plantings, with diff't manure,	143.	114.	72.

An average difference in all the cases, except that of Mr. Burgess, in Columbia Co., is shown of more than half, between the

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early and late planting, and with Mr. Morse, of Madison Co., who carefully noted the effect of the disease, it was more than four fold as much on the late as upon the early planting; but with Mr. Eastman, his early planting was very slightly diseased and the later none. The disease was light upon him, in all cases, except where induced by manuring. With the other gentlemen, Mr. Culver and Mr. Burgess, the disease seems not to have shewn itself.

Mr. Eastman's table is full of instruction, in relation to the effect of the different kinds of manure upon the disease, and his, as well as those of the other gentlemen, are of great value in shewing the effect of different kinds of manure, and the different modes of applying them to the crop. The hog manure has proved a powerful agent in producing the crop, but it is also a promoter of the disease, still, however, leaving as large or larger yield of sound crop than other manure.

The experiments shew, that the safest and best way to apply our ordinary barn yard manure or compost is, to spread it upon the ground, after plowed, and drag or harrow it in.

In the application of plaster, ashes and lime, the experiments by the 4 gentlemen, show the following results:

	Variety.	No manure.	Plaster.		Ashes.		Lime.	
			In hill	After up	In hill.	After up.	In hill	After up.
H. H. Eastman,.....	Irish Mercer.	36 22	32	32	44 26	38 29	36	33
Volney Burgess,.....	Mt. June	....	78	70	caustic 90 leached 88.	108 106	72	71
J. B. Morse,..... 2d piece, sandy soil,..	....	153 193	206	206 218	208	208 214	233	233
N. Culver,.....	.....	.....	25	20	15	19	18.14	19.2

Mr. Morse does not state whether he applied these manures in the hill, or after the plant was up; and we place the quantity under both heads. He gives the quantities applied to the acre; plaster 3 bushels; ashes 12; lime 10. It is very much to be regretted, that he did not apply both ways and give us the manner of applying, especially where so much effect was produced.

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Size of the seed planted, whole and cut.

	Variety.	Large Whole.	Weight seed.	Weight crop.	Large cut.	Weight seed.	Crop.	Medium whole.	Weight seed.	Crop.	Medium cut.	Weight seed.	Crop.	Small whole.	Weight seed.	Crop.	Small cut.	Crop.
			lbs. oz.	lbs. oz.											lbs.			
Eastman, ...	Irish, ...	1	14.1	43.6	....	.....	.....	1	6.12	23.6	.....	.....	....	1	3	18.6		
	Eng. White,	1	11.8	46.10	2 halves.	11.8	48 6	.....	.....	.....	.....	.....	....	2	6	23.14		
					1 do	6.	32.6	.....	.....	.....	.....	.....	....	4	12	33.6		
					4 quart'rs	11.8	48.4											
			lbs.															
Burgess, 25 hills	.....	2	12½	138	2 halves.	6	125	2	6	97	.....	.....	....	2	3	79		
			bu pr a.	do	cut in four	bu pr a.			b pr a.		in 4 pieces	bu pr. a.			bu. pr a.			
J. B. Morse, ...	.....	1	31.66	150	pieces, 2 in hill.	13	173	1	16	141	4 in hill.	16	148	1	4.6	120		
				lbs. oz.			lbs oz.		oz.	lbs. oz.								lb oz
N. Culver, ...	.....	1	3¾ oz.	23.4	cut in four pieces 3 in hill.	3¾ oz.	23.4	1	2 ¾	17.12	in two pieces.	2¾ oz.	17	2	1½ oz.	19	3 hal's	17.6

These results show a decided advantage in planting large seed, either whole or divided, and shew economy in dividing the potato. For instance—Mr. Morse planted large whole potatoes, 31½ bushels per acre, and had 150 bushels crop. He cut into 4 pieces, and planted 2 in a hill—equal to 13 bushels per acre, and dug 173 bushels.

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The vegetable organization in the large tuber being larger than in the small one, throws out a larger and stronger plant, and, if the soil is light, it holds an advantage over the weaker plant, from the small tuber through the season, still, if the soil is strong, the plant from the small tuber will become vigorous and produce a good crop. It having frequently done so, has given the impression, that the small potato is as good for seed as the large. This impression the committee think wrong.

The committee award to H. H. Eastman, of Marshall, Oneida Co., the first premium of.....	$125 00
To Volney Burgess, of Chatham, Columbia Co., the second premium, of.....	75 00
To J. B. Morse, of Cazenovia, Madison Co., the third premium, of	50 00
To N. Culver, of Arcadia, Wayne Co., they recommend to the executive committee, to give a piece of plate of the value of..... ...	25 00

S. CHEEVER,
S. P. CHAPMAN,
HENRY KEELER,

Febr., 1854. *Committee.*

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FLAX AND ITS CULTURE.

The committee appointed to examine any reports, that might be presented for the premiums offered by the Society at the winter meeting, on flax and its preparation for use, not having submitted to them any application for the liberal premiums offered by the Society, beg leave to submit some considerations, relative to the importance of flax culture in our State.

From the best information before the committee it is believed, that the number of acres devoted to the cultivation of flax, is about eight thousand. In Washington and Rensselaer counties much the largest amount of flax is cultivated, and probably about 5000 acres. The other counties which devote attention to this crop, to any considerable extent, are Herkimer, Lewis, Jefferson, Seneca, Cayuga, Oneida, Otsego, Erie, Cortland and Chenango. The culture of flax, in Washington and Rensselaer, has been continued for a period of over thirty years, and the large extent of land under cultivation, at the present time, affords evidence, that this crop is not of a more exhausting nature than the ordinary grain crops. To show the profit attending its culture, with the present demand for the fiber and seed, the following items of expense in cultivation, and the return from the crop, are submitted, resulting from the ordinary culture as now practiced.

Expense of cultivation, per acre:

1 bushel of seed, at 12*s.*, ...	$1 50
Getting in crop, ...	2 50
Use of land, ...	6 00
Pulling crop, ...	3 50
Cleaning of seed, rotting and marketing, .	4 00
	$17 50

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Return of crop:

1 ton straw, per acre, ...	$16 00
12 bushels seed, at $1.50,.....	16 50
	$32 50
Showing a credit to the crop of,.....	$15 00 p. acre.

The method of cultivation is to thoroughly prepare the land and sow the seed, as early as practicable in the spring, with one bushel of seed. When one-third of the leaves have fallen, the crop is ready for pulling, and as soon as the seed bolls are taken off, is spread on clean meadow land for rotting, and when sufficiently rotted, is ready for the machine to prepare the flax for use.

The land best suited for flax is a clay loam, following corn and potatoes, or upon the sod turned over; any land, however, that is good for corn, wheat or oats, will do well.

The demand for flax is such, that it must continue to be a valuable crop for culture. There are now in this State some fifteen to twenty spinning mills in operation; an increase of six within the last three years, besides a large number in operation in New Jersey and the New England States, and the demand is such for flax, that the price, for common qualities, has increased from 10 to 13 cts. per lb.

The uses to which flax is devoted, are for mixing with cotton and wool, use on paper stock, for stuffing, regular line spinning, and for cordage, and felting.

Improvements in machinery.

The improvements made in machinery, for breaking and dressing flax, have added at least $8.00, per acre to the producer.

Machinery, which was exhibited at the Crystal palace, and was awarded a silver medal, secures such a perfect separation of the shives from the fiber, that the flax is made entirely even, ready for the spinner. Prof. Wilson, one of the English commissioners, (who delivered the valuable address before the Society at Saratoga, on flax*) remarked of the machine, as we are informed, that

* Ante. 39.

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it was the best machine he had ever seen, and accomplished the great desideratum, by cleaning the fiber without injuring the lint; thus rendering it more valuable and better fitted for use. The process of dew rotting, with which all our farmers are familiar, is the one that, for the present at least, must be resorted to, as the manner of preparing the fine qualities by steam and water processes, has not as yet been introduced to any extent in this country.

Dew rotting.—The process of dew rotting is beneficial to meadow land and is equal to a good coating of manure. It operates beneficially in two ways, first in making and keeping the ground shaded and moist; second, by the gummy matter which is dissolved and acts as a valuable fertilizer.

The refuse of the flax, seed and chaff, is used abroad as food for stock, and is deemed two-thirds as valuable per lb. as oats.

Demand.—The importations of linen goods annually into this country from abroad, is from 15 to 25 millions of dollars, and there is no good reason why this should not be saved to our country, as it eventually will be, when the subject is properly understood.

We would recommend to the Executive committee to offer premiums for the cultivation of flax, of not less than five acres, with the same premium as for grain crops, requiring a full statement of the manner of culture and all the expenses attending it; giving the premiums to the best and most economical methods of cultivation.

Prepared manure.—The land which may be set apart for flax, should be well tilled, and, if flax is sown on the same land oftener than every fourth year, the following prepared manure will be found to replace, in a measure, the elements of the flax plant, per acre.

Muriate of potash, ...	22 lbs.
Common salt, ...	20 "
Burnt gypsum, ...	25 "
Bone dust, ...	46 "
Epsom salts	48 "

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We are aware that much larger crops are grown, than we have estimated, but it is believed, that the crops which we have referred to, and the estimates made of the proceeds, show a result, that will pay the farmer for the cultivation of the crop, and whatever shall be gained by superior culture, will add to his profits and render the culture of flax still more desirable.

JONATHAN STOTT,
WILLIAM WALCOTT,
E. F. HOVEY,
Committee.

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LIST OF APPLES EXHIBITED AT WINTER MEETING, 1854.

R.H . BROWN, GREECE, MONROE COUNTY.

Rhode Island Greening, Baldwin, Black Gilleflower, Red Gilleflower, Northern Spy, Holland Pippin, Y. Newtown Pippin, Kirk's Lord Nelson, Ribston Pippin, Swaar, Pomme Grise, Yellow Bellflower, Fameuse, Vandevere, Roxbury Russet, Golden Russet, Esopus Spitzenbergh, Red Canada, Seek-no-further, Sweet Pearmain, Sweet Russet, Pound Sweeting, Golden Sweeting, Green Sweeting, Pumwater, Twenty Ounce, Talman Sweeting, Cranbery Pippin.

28 varieties of apples. Soil a chesnut sand and clay on hardpan; two and a half miles from the Lake, Greece, Monroe Co.

ROBERT H. BROWN,

J. H. WATTS, ROCHESTER.

Northern Spy apples.

A. B. RING & CO., WYOMING COUNTY.

Twenty Ounce Pippin, Esopus Spitzenberg, Talman Sweeting, Ribston Pippin, English Golden Russet, Roxbury Russet, Northern Spy, Vandevere, Seek-no-further, Golden Pippin, Pumpkin Sweet, Honey Sweet, Baldwin, Peck's Pleasant, Sweet Russet, Yellow Swaar, Wine, Rhode Island Greening, Gilleflower, Belleflower, Blk. Detroit, Green Swaar, Bailey Sweet, Rambo, Rose Russet.

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A. FROST & CO., ROCHESTER, N. Y.

Holland Pippin, Roxbury Russet, Green Sweeting, Rhode Island Greening, Sweet Russet, Westfield Seek-no-further, Kirke's Lord Nelson, Esopus Spitzenbergh, Tallman Sweeting, Northern Spy, Swaar, Ribston Pippin, Twenty Ounce Apple, Golden Russet, Baldwin, Newtown Pippin, Black Gilleflower, Fameuse, Pomme Grise, King apple.—20 varieties.

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STATEMENTS, FEEDING CATTLE, SWINE, AND SHEEP,

AT WINTER MEETING, 1854.

G. V. SACKET, SENECA FALLS..

Method of feeding 50 head of cattle.

The subscriber grazed and fed 50 head of cattle, since the first of September last (160 days); 13 of the heaviest he offers at the State Fair for premium, and, agreeable to the rules of the Society, submits the following statement as to the method he pursued in fattening them. He put his cattle into good feed, with running water in the lots, and continued grazing until the third day of December; from that date to the sixth day of February he has fed them hay and meal in stables. They grazed on pasture only during the month of September; through the month of October two large wagon loads of pumpkins were fed to them daily, with the seeds in; they thrived on them for about two or three weeks, from which time I discovered, through close observation, that the seeds injured them by urinary effect. I observed, in driving them from one field to another, some of them would stop every 20 or 30 rods and pass off urine in unusual quantities; they looked dull and heavy, and the last week, they evidently declined in flesh. During the month of November I fed them roots, giving the 50 head 50 bushels per day. I fed them whole on clean pasture, and let them bite them off, without cutting; they eat them clean and wasted none, unless they got them into the manure; they thrived uncommonly well. I fed about 1500 bushels of roots before I put them into the stables. I have fed cattle a number of years, and my cattle are quite as fat the 1st of February, as I ever had them before the 1st of April, which I think is the result of the roots I fed in November; indeed this has been the month complained of, by all feeders, with whom I have been ac-

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quainted. Pastures are frequently abundant, but the feed frost bitten and sour, not furnishing the nutriment necessary to keep cattle that have been thriving, advancing in their flesh, and when you once check their progress, the feeder not only looses for the time he keeps his stock on sour frost-bitten pasture, but an ox, like a pig or a calf, when once stunted, requires considerable time, to regain his former condition.

Root Culture.

You will permit me to digress, to say a few words on root culture. I have an English tenant, from the land of roots; he put in an acre of beets and carrots, in 1852, and harvested 800 bushels, accurately measured. This last season he put in, one acre of carrots, one of turnips, and three of beets; the yield, this year, on actual measurement, was 500 bushels, per acre; he puts them in on shares, as he puts in other crops, and he says, the labor is not greater, per acre, than raising corn, and, from my own observation, I am of the same opinion, and it is clearly my opinion, it has proved the most profitable crop he has on the farm; he sold his share of the carrots at 2 *s.* per bushel, and 1 *s.* 3 *d.*, per bushel, for his beets and turnips.

On the third day of December, I put my cattle in stables, where I have fed them since with what hay they would eat, and to my oxen I fed 16 quarts, to my steers 12 of corn meal, ground with the cob, half of it at 6 o'clock in the morning; I then fed them hay until 9 o'clock, when I turned them into the yard, to water, where they lay until 4 o'clock in the afternoon, when they were put in the stable again, and fed the same amount of meal, with plenty of hay during the night. To some of my cattle I fed two quarts of oil meal, deducting the same amount of corn meal; I have observed no greater benefit from the oil meal than from the corn meal. The thirteen head, now on exhibition, weighed on the first of September, 21,300 lbs., averaging 1,640 lbs.; they weighed at home, when I started to the fair, on the 6th inst., 25,600 lbs., equal to 1,970 lbs. per head, an average gain of 330 lbs. per head, equal to two lbs. each, per day; these are my best cattle, and over an average of the full drove. All of which is respectfully submitted. G. V. SACKET.

SENECA FALLS, *February* 7, 1854.

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PIGS.—JURIAN WINNE, BETHLEHEM, ALBANY COUNTY.

The pigs exhibited were dropped the 24th of April; they ran to grass and were fed, with six more of the same litter, on the milk of three cows, with boiled corn, &c., until August 27th, when three of them were weighed; two of them weighed each 126 lbs., the other, 123 lbs.; cost of their feed up to this date, was $24.79; market value of the eight, at eight cents per pound, dead weight, $67.00; profit, $45.00. At this date, a boar and sow pig were turned out for keeping over; the remaining six were fed on the same feed as before, until Oct. 4th, when their feed was changed to boiled pumpkins, shorts, and soft corn, until about the 1st of Dec., when they were again changed to boiled corn, boiled, and occasionally raw meal, until Feb. 9th, when they were killed. No. 1, live weight, 386 lbs.; dead weight, 336 lbs.; shrunk 40 lbs., or about 13 lbs. to the hundred. No. 2, live weight, 323 lbs.; dead weight, 283 lbs.; shrunk 40 lbs., or about 12½ lbs. to the hundred.

JURIAN WINNE.

FAT SHEEP.—NATHAN BROWNELL, PITTSTOWN.

The eight wethers entered by me for inspection, are from the old Spanish Merino stock of sheep. About thirty years ago, I purchased some Spanish Merino ewes from the stock imported by Cadwallader R. Colden, and by careful breeding and crossing with pure Spanish Merino bucks, I have succeeded in getting a very profitable flock of sheep, of which these wethers are a part. The wethers are three years old past, and have been fed in the following manner: I commenced feeding them corn Nov. 1st 1853, fed three quarts per day until Dec. 15th, when I commenced giving them ground feed, with hay and stalks with their corn; from the time I commenced feeding, Nov. 1st, until February 7th, the aggregate amount fed to the eight wethers was as follows:

Ten bush. of shell corn, worth	80 cents per bushel,	$8 00
Three bush. of ears of corn, ground,	40 " ...	1 20
Three bush. of oats, ground,	50 " ...	1 50
Ten bushels of turnips, worth 25 cents per bushel,.....		2 50

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300 pounds of hay, worth 75 cents per hundred, ...	2 25
Cornstalks, worth, ...	55
	$16 00

Live weight on the 7th Feb., 1854,	No. 1, ...	152	pounds.
	No. 2, ...	150	"
	No. 3, ...	145	"
	No. 4, ...	144	"
	No. 5, ...	142	"
	No. 6, ...	140	"
	No. 7, ...	129	"
	No. 8, ...	127	"

All of which is respectfully submitted.

NATHAN BROWNELL.

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HISTORY OF INDIAN CORN;

ITS ORIGIN, ITS CULTURE, AND ITS USES.

BY C. N. BEMENT, ALBANY.

All the early historians, both of North and South America, give the strongest evidences that this grain is of American origin, and speak of it as having constituted a great part of the food of the Indians from time immemorial.

According to a tradition of the Aztec people, the Toultecs, in the seventeenth century of our era, were the first who introduced into Mexico the cultivation of maize (Indian corn), cotton and pimento. It might happen however, that these different branches of agriculture existed before the Toultecs, and that this nation, the great civilization of which has been celebrated by the historians, merely extended them successfully. Hernandez informs us, that the Otamites even, who were a wandering and barbarous people, planted Indian corn. Thus we see it was cultivated in America long before the discovery, and formed a most important article of food for centuries.

Mr. Schoolcraft, in his report, says, "that it is conceded on all hands that this is a tropical, or at least a southern plant." He remarks, "that it was not known in Europe before the discovery of this country, and that we learned the mode of cultivation from the Indians, and not they from us." It was cultivated by the Iroquois in fields sufficiently large to entitle them to the name of agriculturists. It was undoubtedly highly prized by them as an essential article of support, as Mr. Schoolcraft states "that the

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warriors of the Six Nations were in the habit of undertaking journeys of thousands of miles in extent, carrying no other food than a little meal from parched and pounded corn, relying on the forest for meat."

In further proof of the American origin of Indian corn, it may be stated that it is still found in an indigenous state, from the Rocky Mountains, in North America, to the humid forests of Paraguay; where instead of having each grain naked, as is always the case after long cultivation, the kernels are completely covered with glumes or husks. Although there has been much written upon the eastern origin of this grain, it did not grow in that part of India watered by the Indus, at the time of Alexander the Great's expedition, as it is not mentioned by Nearchus, the commander of the fleet, among the productions of that country.

Jos de Acostas says, "it was the only grain found in the West Indias by the Europeans; that it grows upon a long reed with large grains, and sometimes two ears on a reed, one of which seven hundred grains have been told; that they sow it grain by grain, and not scattering as is done with wheat, and it requires hot and moist soil."

There is not a particle of evidence that this grain was known in any European country, till after its introduction from America—this fact is admitted by all. As soon as it was introduced into Europe, after the discovery of America, it made the circuit of the Eastern Continent with amazing rapidity, and wherever it can be cultivated across the continent of Europe and Asia, from France to China, has become a great favorite. We gave Europe and Asia, corn and potatoes; they furnished America with wheat, barley and oats.

It is a still more curious fact, that immediately after its introduction into Europe, it spread with great rapidity into every country and province where the climate was thought to be suited to it. Now, if it had been known in Asia, if it had been cultivated by the Turks, how could all these things have happened? Why was not so useful a grain introduced into Europe before, or why did it spread so rapidly when it was introduced?

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The introduction of Indian corn into Europe, probably, dates back to the time soon after Columbus discovered America; but little attention appeared to have been paid there either to its culture or use, until towards the last century. An amusing and in many respects an instructive work was published some years since, by Wm. Cobbett, upon the merits of Indian corn, whose sanguine wishes upon the subject of its introduction as a field crop into England, led him further than most people have been inclined to accompany him. A cotemporary writer remarks, that "Cobbett was corn mad at one time. He saw too soon by twenty years, and depended on cultivation rather than importation. He wrote about Indian corn, planted Indian corn, ate Indian corn, raised Indian corn, made paper of Indian corn husks, and printed a book from the Indian corn paper." There is to be seen in this work a very minute and interesting account of the various manipulations which must be attended to by the corn grower, before this grain is ready for sale, as well as very particular directions for turning the produce to the best and most profitable account in domestic economy.

The most important feature, perhaps, in the history of Indian corn, is its introduction a few years since from the United States into Great Britain and Ireland, as a cheap and nutritious article of human food. For this patriotic and philanthropic act, these two nations are highly indebted to the simultaneous exertions of the late Henry Colman, who was engaged for several years in making an agricultural tour in Europe, and Dr. John S. Bartlett, late of the British army, the latter of whom addressed a letter on the subject, in May, 1842, to Lord Ashburton, in which he arrives at the following directions:

First.—That the laboring class and the poor of Great Britain require a cheaper article of food than wheaten bread.

Second.—That although wheat contains a larger portion of *gluten*, or the nutritive ingredient, bulk is necessary, not only to satisfy the craving of hunger, but to promote digestion by "the stimulus of distention," which bulk alone can give.

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Third.—That the craving of hunger being removed or alleviated by the quantity taken, the mind is more at ease; the mental irritability consequent upon hunger, is assuaged, and man goes to his labor with cheerfulness and vivacity, becoming a more peaceful citizen and perhaps a better man.

Fourth.—That Indian corn possesses a great superiority over rye, barley, oat-meal or potatoes; that it contains more *gluten*, but that its constituent parts are better proportioned, and consequently make a better article of food.

Fifth.—That admitted into England, duty free, it would be a cheaper article of food than any of the above named, besides being vastly superior to them in nutritive and healthful properties.

Sixth.—That it can be obtained in any quantities, from all parts of the United States, and particularly from the Middle and Southern states, on the Atlantic sea-board, as New-York, New-Jersey, Pennsylvania, Maryland, Virginia and North Carolina, whose proximity to the sea and ports of shipment, give them great advantages by saving inland conveyance. The whole valley of the Mississippi, also, yields it in abundance.

According to the United States census of 1840, and the result of Professor Tucker's inquiries as to the prices in different parts of the country, the quantity of Indian corn raised in the United States in 1839, and the value of the same was as follows:

	Bushels.	Value.
New-England States, ...	6,992,909	$4,794,893
Middle States, ...	39,946,213	23,356,515
Southern States, ...	94,998,255	44,914,506
South Western States,.....	129,741,093	38,259,033
North Western States, ...	105,853,405	21,186,681
	377,351,875	$132,591,628

The average value of Indian corn for the United States, according to this statement, is about 35 cents per bushel.

The blades and stalks of Indian corn, as is well known, form an excellent fodder for horses and cattle, particularly for milch

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cows, and which, estimating twenty pounds for every bushel of grain, amount to 3,775,000 tons, which, by Professor Tucker's estimate, would amount to $37,750,000.

Thus the value of the crop of Indian corn in the United States in 1839, may be stated to have exceeded one hundred and seventy millions of dollars, an amount greatly exceeding in value that of every other crop raised in this country.

The crop of Indian corn for 1845, was estimated by the Commissioner of patents, in his annual report, to have amounted to 417,899,000 bushels; and on that basis it may be assumed that the crop of 1846, was at least 425 millions of bushels. This quantity as an average value of fifty cents a bushel, would amount to $212,500,000. 1850, 592,326,612 bushels. Value $296,263,306.

The importance and value of Indian corn are too well known to every agriculturist in this country to need illustration. It is, without doubt, the most important grain for bread, next to wheat, of this country, and there is none, perhaps, of more extensive use and utility. Notwithstanding the vast quantity of wheat produced, and its importance to the country, the great bread product of the country is after all, corn; certainly will be so, if its capacity of feeding both man and beast is taken into consideration.

I am induced to believe that at least one-fourth part of the crop of Indian corn raised in the United States, is sold by the farmers to non-producers, for domestic and foreign consumption, leaving three-fourths of the crop for the use of the farmers themselves. Estimating one-fourth of last year's crop, at one hundred millions of bushels, and sixty cents per bushel as the average price for the whole United States, or for all the different markets in which it is sold by the farmers, it results that the amount of sales of Indian corn by them, to purchasers of all kinds, is sixty millions of dollars more than the same crop would have brought in 1840.

It is difficult to estimate the proportion of the crop which has been and will be exported to foreign countries. Previous to the year ending June 30, 1846, the quantity of Indian corn and meal

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exported, did not average a million and a half of bushels annually. The actual quantity of each exported for the four years and nine months ending June 30, 1845, was as follows:

	Bushels.
Indian corn,	3,474,109
" " meal,	1,132,749

The total value for the year ending June 30, 1846 (the quantity not being given), compared with the previous years, shows a large increase, as follows:

Exports.	1846.	1845.
Indian corn,	$1,186,663	$411,741
" " meal,	945,081	641,552
	$2,131,744	$1,053,293

Increase for 1846, $1,078,451; equal, probably, to about two millions of bushels of Indian corn and meal, and making the total quantity exported in that year, about four millions of bushels, including both corn and meal.

If we estimate the surplus of Indian corn which we can spare for export to foreign countries, at four per cent on the crop of last year, which exports, however, are liable to be checked by the scarcity of vessels to transport the grain, and the high price of freight, we have seventeen millions of bushels of corn for export, or taking less than two-thirds of the quantity, we may ship to Europe and elsewhere, twelve millions of bushels of Indian corn, which at eighty cents, as the average value, amounts to $9,600,000. The value of the same exported for one year ending September 30, 1840, was as follows:

Indian corn,	$338,333
" meal,	705,183
	$1,043,516

The exports for that year were about the annual average in value for a series of years. It is thus shown that we may calculate on an actual gain to the country from the exports of Indian

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corn and meal, for the current year, over the average of former years (when this grain attracted but little attention in Great Britain and Ireland, as the food of man), of at least $8,000,000. (*Transactions of the New-York State Agricultural Society.*)

On every part of the globe where the hand of civilization has broken the turf, this beautiful and useful grain receives a large share of attention. It is raised from Canada to Patagonia, through almost every variety of climate and people, and over an extent from north to south of more than seven thousand miles.

Its flexibility of organization makes it very easy of adaptation to climate and soil; though it prefers moist and rich soils with strong heats. There are varieties of it which can be raised in tropical climates, at a height of more than nine thousand feet above the level of the sea. The warmest region of the torrid zone produces Indian corn in abundance, where three crops can be taken in a season; while the short summers of Canada, have a variety adapted to them.

Properties and uses. There is no species of cerealia which manifests itself under such various forms, sizes, colors and chemical ingredients as Indian corn. While some persons have estimated it in value equal if not superior to all other kinds of grain, others on the contrary have placed it in the lowest station in the group in which it belongs. It has been contended by some that it contains no gluten, and little if any ready formed saccharine matter, and hence could possess but a very small nutritive power, while others have observed that domestic animals which are fed on Indian corn, very speedily become fat, with their flesh at the same time remarkably fine; that horses which consume it, are enabled to perform their full share of labor, are exceedingly hardy, and require but little care; and the inhabitants of countries where it forms a large share of their food, are, for the most part, strong, healthy and long lived. Barlow, the poet, ascribes the athletic form of his parents' numerous sons to the nutritive qualities of this grain. The investigations of vegetable chemistry however, have more recently revealed to us many important and interesting facts on these points, yet our knowledge on the subject is far from being complete.

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According to Mirabelle's analysis of Indian corn, made twenty or thirty years ago, it contains a saccharine matter of different degrees of purity, from which alcohol, the oxalic and acetous acids may be obtained, a vegetable amylaceous substance, a glutinous substance, muriate and nitrate of magnesia, carbonates of potash, lime, and of magnesia, and iron.

According to the analysis of Mr. Payen, Indian corn consists of the following ingredients:

One hundred parts by weight yielded—

Starch,	24.4
Nitrogenised matter,	4.8
Coloring matter,	.2
Fatty matter,	35.6
Cellular tissue,	20.0
Dextrine,	2.0
Various salts,	7.2
Loss,	1.8
	100.0

The proportion of oil is evidently overrated in this analysis, and the error is attributed by Dr. Jackson to the solubility of the zeine or gluten of the corn in ether which Payen used to dissolve the oil: the gluten being taken up by the process was mistaken for oil, and credited in the analysis as such, when it should have been put under the head of nitrogenised matter. It is not surprising, he remarks, that Dumas in quoting this analysis should observe that, "individuals who eat Indian corn for some time, present symptoms of an accumulation of fat in their tissue, which will not appear astonishing when we consider that a bushel of corn would yield a quart (litre) of oil." If this doctrine were true, those Americans who derive a great part of their substance from Indian corn, would be an excessively fat people.

According to the analyses recently made in England, by Prof. Playfair, some specimens of Indian corn of American growth, yielded in one hundred parts by weight the following proportions:

Protein,	7
Fatty matter,	5

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Starch, ...	76
Water, ...	12
	100

By this analysis it would seem that Indian corn contains less protein or nutritive matter than wheat, oats or barley, but more than either rice or potatoes. In fact it contains about three and a half times the quantity of nutritive matter that is found in potatoes, and a much larger proportion of starch and less water. It also contains more fatty matter than any other products, which is a very important consideration when the mere fattening of animals is taken into account. Hence as an article of food either for man or animals, it is superior to potatoes and rice, but inferior to wheat, oats or barley. It is relished by all animals that are not carnivorous, and certainly is highly nutritive.

According to the researches of Dr. C. T. Jackson, of Boston, who stands preeminent as a chemist, Indian corn in general is composed of variable proportions of starch, dextrine, gum or mucilage, sugar, gluten, oil, the phosphates of lime and magnesia, with iron; some varieties however are nearly or quite destitute of gluten, oil, or the salts of iron.

Among the curious results of Dr. Jackson's experiments, he proved that the relative properties of phosphates in grain, depended on the assimilating power of each species or variety; for an ear of corn having been selected, which had on it two different kinds, viz: the Tuscarora and the Sweet corn, more than double the amount of phosphates were obtained from the latter than from the former, notwithstanding the kernels came from the same ear, grew side by side from the same stalk, and were derived from the same soil. Hence it may be inferred, that a crop of sweet corn will sooner exhaust a soil of its phosphates than any other variety, and if a soil be deficient in these materials, more must be added to produce it in perfection.

But what gives to Indian corn its greatest importance is the actual amount of nutritive matter which it contains. We now give another analysis of Indian corn, showing its composition as follows:

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Silica,	38.45
Potassa,	19.51
Phosphate of lime,	17.17
" magnesia,	13.83
" potassa,	2.24
Carbonate of lime,	2.50
" magnesia,	2.16
Sulph. of lime and magnesia,	.79
Silica mechanically formed,	1.70
Alumina and loss,	1.65
	100.00

Making in all one hundred parts. In other words we may say on the authority of Dr. Dana of Lowell, there is in it of

Fat forming principles, gums, &c.,	88.43
Flesh forming principles, gluten, &c.,	1.26
Water,	9.00
Salts,	1.31
	100.00

A glance will show how greatly the fat forming principles predominate in the one hundred parts. There is hardly any grain, which yields so much for the support of animal life. We may therefore say, that Indian corn is a most profitable crop, especially as when the offal is properly managed, there is no grain which returns so much to the ground. It is a fact too, that it may be cultivated longer in succession than any other grain, and, if kept dry, it may be preserved for an indefinite period, without injury. As a fattener of cattle, swine and poultry, we may say, that Indian corn is unrivalled in utility. The analysis of Dr. Dana, as given before, is sufficient to show at once, how important it is for such purposes; as food for man it is extensively used, though by some thought too stimulating.

We subjoin a comparative analysis of Indian corn, at two different stages, by Dr. J. H. Salisbury, chemist to the New-York State Agricultural Society, presenting, as we believe, the most

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minute and extensive chemical investigation of the plant and its several parts, ever yet made. "The amylaceous part around the chit," says Dr. S., "is yet soft and milky; at this stage the kernels burn to a white ash much more readily than when ripe."

TABLE 20.—Oct. 5th.

Carbonic acid	Trace.
Silicic do.	0.900
Phosphoric acid, with a little per oxide of iron,	41.850
Lime,	0.075
Magnesia,	12.420
Potash,	28.405
Soda,	11.840
Sodium,	0.345
Chlorine,	0.520
Sulphuric acid,	1.240
Organic acid,	2.100
	99.675

TABLE 21.—Oct. 18th. Corn ripe.

Carbonic acid,	Trace.
Silicic acid,	0.850
Phosphoric acid, with a little per oxide of iron,	49.210
Lime,	0.075
Magnesia,	17.600
Potash,	23.175
Soda	3.605
Sodium,	0.160
Chlorine,	0.295
Sulphuric acid,	0.515
Organic acid,	5.700
	99.175

The most interesting feature in the two foregoing analyses, is the relative increase of phosphoric acid, and the decrease of the alkalies, as the kernels approach maturity.

Uses.—During our revolutionary war, molasses was frequently made from the stalks of Indian corn, and, while it could be kept from fermentation, it was highly prized, but soon became tart; an evil, doubtless, easily corrected by lime, as is now practised in all sugar manufactories. It has been ascertained, that a bushel of corn, worked in a distillery, gave over a pint of oil; it was easily purified, and burned with a clear, bright flame.

It is stated that a distillery has been established in the vicinity of Lake Ontario, where oil is extracted at the rate of sixteen gallons from one hundred bushels of corn, leaving the remaining portion of the corn more valuable and in better condition for distillation than before the oil is extracted.

This change in corn is one of considerable importance, so far as regards facility of digestion, for after the decomposition or extraction of the oil, it is more readily digested by man, though less fattening to poultry, cattle, and swine, &c.

One important principle of the oil in corn, is to keep the meal from souring, as it has been observed that a flint corn meal will keep sweet for a long time, even when put up in large quantities,

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without being kiln-dried; while the meal of the Tuscarora and white flour corn will become sour in a very short time. The proportions of oil in corn, as far as has been examined, varies from entire absence to eleven per cent., according to the varieties employed. Oily corn makes a dry kind of bread, and is not sufficiently adhesive to raise well without an admixture of rye or other flour.

Corn and cob.—It has been ascertained by repeated experiments, that four quarts of corn and cob meal, well boiled, will, when cooled, make about twenty quarts of thick mush, which is an excellent food for swine. As food for working horses and mules, for fattening cattle, or for milch cows, crushed or ground corn and cob meal is one of the very best and cheapest substance that can be used.

Varieties.—It is proper here to notice briefly, the more important varieties of Indian corn, which are very numerous, exhibiting every grade, size, color, and conformation, between the shrubby reed that grows on the shores of Lake Superior, to the gigantic stalks of the Ohio valley; the tiny ears, with flat, clear, clinging grains of Canada, the brilliant rounded little pearl, or the bright red grains and white cob of the eight-rowed hematite, to the swelling ears of the big white and yellow gourd seed of the south.

There is one variety common in Hungary, which M. Parmentier endeavored to introduce into France; it ripens in two months. A still more remarkable kind, which is said to be cultivated on the shores of the South Sea, which ripens in less than forty days.

A species of corn called Tunicate is found in Oregon, each kernel is covered with a glume or husk; owing to the difficulty of separating the grain from the husk, it is of little value. Nuttal describes a variety called the early Mandan corn, cultivated by the aborigines about the Mississippi; it ripens in a climate where no other variety could exist.

Indian corn ripens at a time when most other grains have been harvested; it therefore gives employment when there would be little else to do.

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The principal varieties cultivated in the United States, which may be distinguished by the number of rows or grains on the cob, and the color, shape, or size of the kernels, may be classified and described as follows:

YELLOW CORN.—The colors of the varieties coming under this head, as before observed, are dependent mainly on the shades of the oil as seen through the transparent epidermis or hull.

1. *Golden Sioux, or Northern Flint corn*—Derived from the Sioux Indians, in Canada; having a large cob, rather short as to length, with twelve rows of moderate sized grains, abounding in oil, and is regarded as one of the best varieties for fattening animals, or for human food. By skillful tillage, 130 bushels have been raised to the acre, weighing 9,216 lbs. in the ear; when dry, 75 lbs. of ears gave a bushel when shelled. Several valuable hybrid varieties have been produced between the Sioux and King Philip, the Gourd-seed and the Sioux.

2. *King Philip, or Eight-rowed Yellow corn*—So called after the celebrated Indian chief of the Wampanoags of that name, from which tribe the seed was obtained. The ears which contain only eight rows are longer than those of the Golden Sioux, and it will yield about the same quantity of oil. It is a hardy plant, which belongs to a high latitude, grows to about nine feet in height, stalks small, ears from ten to fourteen inches in length, much esteemed in New England as a substantial article of food, where it has been cultivated from times anterior to the landing of the pilgrims.

3. *Canada corn, or Eighteen-rowed Yellow.*—This corn, which is smaller, earlier, and more solid than any of the preceding, contains more oil than any other variety, except the rice corn, and the pop-corn, properly so called. It is highly valuable for fattening poultry, swine, &c., and is grown by many in gardens for early boiling or roasting when grown. Notwithstanding it is very prolific in ears, it is seldom planted in fields, except in regions where the larger kinds will not thrive.

4. *Dutton corn*—A variety first brought into notice in 1818, by Mr. Salmon Dutton, of the State of Vermont. The ears of corn

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from which it was originally selected, on an average were from eight to twelve inches long, and contained from twelve to eighteen rows. The cob is larger and sometimes grows to the length of fourteen or fifteen inches, but the grain is so compact upon it, that two bushels of small ears have yielded five pecks of shelled corn, weighing 62 lbs. to the bushel. With proper management, an acre of ground will yield 100 to 120 bushels to the acre. As it abounds in oil, gives a good yield, and ripens early, it has been always a favorite variety for culture in the Northern States.

5. *Southern Big Yellow corn.*—The cob of this corn is thick and long, the grains much wider than deep, and the rows unite with each other; their sides fall off almost to a point; this gives the outside ends of the grain a circular form, which imparts to the ear an appearance somewhat resembling a fluted column. The grain contains less oil and more starch than the northern flint kinds, yet its outward texture is somewhat flinty, solid and firm. It comes rather late into maturity, affords an abundant yield, and is much used for fattening animals; mixed with either the white gourd varieties, the yellow gourd seed is produced, which is often mistaken for an original form.

6. *Southern Small Yellow corn.*—The ears of this sort are more slender, as well as shorter than the last named variety; the grains are smaller, though of the same form; of a deeper yellow, more firm and flinty, and contain an abundance of oil, which renders it more valuable for the purpose of shipping or for feeding to poultry or swine. Although it is less productive than the big yellow, it ripens earlier and consequently is sooner out of the reach of the autumn frosts.

WHITE CORN.—The varieties which constitute this division, are exceedingly variable, both as regards their composition and size, as well as in their yield and times of coming to maturity.

1. *Rhode Island White Flint corn.*—The grains of this variety are about the size and shape of those of the Tuscarora corn, but differ from them in containing an abundance of a transparent and colorless oil, which may easily be seen, through their clear pellucid hulls. The farinaceous parts of the grains are white,

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and, as the quantity of oil which they contain is large, the flour or meal is more substantial as an article of food, and less liable to ferment and become sour. In Rhode Island, where it produces an abundant yield, it is a favorite grain and stands in high repute for human food.

2. *Southern Little White Flint corn.*—The kernels of this variety are considerably smaller than those of the preceding, and much resemble them in shape; but they are more firm and solid, contain more oil, and consequently more valuable for feeding poultry and swine, and for human food. Although the cob is smaller in proportion to the size of the ears, the yield, per acre, is less abundant and hence it is but little grown.

3. *Dutton White Flint corn.*—A variety, not differing materially from the Yellow Dutton corn, except in the color of its soil.

4. *Early Canadian White Flint corn.*—Cultivated principally for early boiling or roasting, while green.

5. *Tuscarora corn.*—A variety, obtained from the Tuscarora Indians, in the State of New-York. The ears contain from twelve to sixteen rows of grains, which are nearly as deep as they are broad, of a dead whitish color on the extreme end, composed entirely within of pure, white dextrine and starch, except the germs. As it contains neither gluten nor oil, it may be profitably employed in the manufacture of starch. It is much softer and better food for horses than the flinty kinds, and, if used before it becomes sour, it may be converted into an excellent bread. It is also an excellent variety for boiling, when green or in the milky state.

6. *White Flint corn.*—The ears of this variety contain twelve rows of rather white, roundish, thick grains, which are filled with a snowy white flour, composed principally of starch, but does not contain either gluten or oil. It is much used in some parts of the country, particularly in New Jersey, for grinding up with buckwheat, mixed in proportions of four or five to one of corn, in order to improve the color and other qualities of the buckwheat flour. As it possesses similar properties as the preceding variety, it may be profitably employed for the same purposes. It is also an excellent variety for boiling, when green.

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7. *Virginia White Gourd seed corn.*—The ears of this corn, which are not very long, neither is the cob so long as those of the big white or yellow flint, contains from twenty-four to thirty-six rows of very long, narrow grains, so soft and open in texture, that they will not bear transportation by sea, unless they are previously kiln-dried, or completely excluded from the moist air. These grains, at their extreme ends, are almost flat, and grow so closely together, from the cob to the surface, that they produce a greater yield than any other variety, in proportion to the size of the ears. They contain more starch and less gluten and oil than those of the flint kinds and from their softness, they serve as better food for horses, but are less nourishing to poultry and swine. The color of this variety is always white, unless it has been crossed with other kinds, which may invariably be known by a small indenture in the ends of the grains, when perfectly dried. The oily and glutinous parts of the Virginia Gourd seed, always occur on the sides of the elongated grains, while the starch projects quite through to their summits, and by contraction in drying, produces the pits or depressions peculiar to their ends. This variety is later ripe, though more productive than any other kind.

8. *Early Sweet corn.*—This variety was introduced into Massachusetts, in 1779, by Capt. Richard Bagnall, of Plymouth, from the country bordering on the Susquehannah, on his return from the expedition against the tribes of the six nations, under the command of Gen'l Sullivan. There are two kinds of this corn: one with the cob red and the other white. The ears are short and usually contain eight rows, the grains of which, when mature, are of a light color and become shrivelled, and appear as if they were unripe. It contains an unusually large proportion of the phosphates, and a considerable quantity of sugar and gum, though but little starch. It is extensively cultivated in the vicinity of cities for culinary purposes, and serves as a delicious food, when boiled green. Large quantities of this corn are prepared by boiling and scalding, when green, separating the corn from the cob, and kiln-drying, by the Shakers, for winter use. It is also preserved in its green state in tin cans, hermetically sealed.

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Preserved in this manner, you have apparently a fresh dish of corn, at any season of the year.

9. *Rice corn.*—A small variety with small conical ears, the kernels terminating in sharp points, which give it the appearance of a bur; the kernels of the size and shape something like rice. It contains more oil and less starch than any other kind, and when ground, its meal cannot be made into bread alone, but is dry like sand. From its oily nature, and convenient size, this corn is peculiarly adapted for feeding poultry.

10. *Pearl corn*—commonly called pop-corn, from the fact of its being used for popping or parching; large quantities of which are sold at the railroad stations, to the passengers, throughout the country. The ears of this variety are small; the grains are round, of various shades of color, the white of a pearlish appearance, and contain, with the rice corn, more oil and less starch than any other variety. Its flavor is pleasant when parched, for which purpose it is generally used, and it forms an excellent dish when hulled and boiled.

11. *Chinese Tree Corn.*—This variety was first brought into notice by Grant Thorburn, of Astoria, near New-York, some 12 or 15 years since. The origin of this corn, it is said, was a kernel found in a chest of tea, and from that single kernel was propagated. It is a pure white variety; a very handsome ear about ten inches long; ten rows; grains very closely set; long and wedge form, well filled out to the end of the cob; some of the grains slightly indented. One peculiarity of this corn is, the ears grow on the end of the branches—hence its name, "tree corn." It is said to yield from one-fourth to one-third more than the common varieties. When ground into meal it is handsomer and better flavored than other white corn. It is also an excellent variety for making hominy, samp, &c. There are generally two ears on a stalk, and often three; sometimes there have been found four ears on a stalk, although the last mentioned number is rare.

There are many other varieties of corn, but the foregoing embrace pretty much all the varieties worthy of cultivation.

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Seed corn should be selected in the field on the stalk; none but the best and most perfect ears; those earliest ripe, full and plump kernels, close set in the cob, and well filled at the end, should be selected; and if there are two good ears on a stalk, save them by all means; select the ears, leaving a few husks on each ear, and braid up, to be kept until winter. Never leave any quantity of corn intended for seed in a situation where the air cannot circulate freely; it is apt to heat which destroys its germinating power.

Repeated experiments have demonstrated the great utility of steeping corn for one or two days before planting, in a solution of saltpetre. This accelerates the growth of the plant, and is a protection against birds, squirrels and mice, and for a while it will keep off worms. An effectual remedy against these depredations, is to add half a pint of hot tar to a peck of seed, stirring the corn briskly for several minutes, as the tar is added, till every kernel is thickly covered with it. This supersedes the necessity of the worse than absent remedy of scare-crows. Instead of driving the crows and other birds from the fields, they should be enticed there by every means; and by rendering the grain distasteful, their appetites are sharpened for the worms and insects, the less conspicuous but more fatal enemies of the grain.

Cultivation.—The most common mode of cultivating is to plant in hills from two and a half to five feet apart, according to variety and size, leaving from three to five stalks in a hill, according to the kind of seed and quality of the land. But our impression is, that where the largest crops have been obtained, the seed has been sown in drills. In either case it has been pretty well settled among farmers, that it should not be hilled, as was the custom heretofore. There seems to be several reasons for this. If the earth is drawn around the stalk at the last hoeing, it sends out new roots, which divert much of the nourishment which would otherwise have gone into the stalk and the ear. Thick planting gives fewer ears upon a stalk, and those of less size. The time of planting in the Northern States is usually the first three weeks in May, depending much on the season. Late frosts will sometimes cut down the first leaves, without destroying the

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germ; but it is always best to defer planting till all apprehension of it are removed. In the Southern states, earlier planting is desirable, and it is there put into the ground from February to April. To give regularity to the rows and facilitate after culture, the furrows for the seed should be struck out each way with the utmost exactness, and twice the corn planted that is necessary to remain. It requires to be covered about two inches deep. The surplus plants can be pulled up at the second hoeing, when all fear of injury is past. If the land be flat before planting, and is light, it should be rolled compactly. The ground may be stirred when the plants first show themselves. This is most economically done with the cultivator or small plow, first turning the furrow from the plant, and then towards it; and if the operation be frequent and thorough, there will be little use for the hoe. Stirring the ground in dry weather, is peculiarly beneficial to corn, and all hoed crops; stir often and keep the weeds down, which facilitates the admission and escape of heat, which inevitably secures the deposit of large quantities of moisture, even in the dryest and most sultry weather. Corn and other crops that were withering from excessive drought, have been at once rescued from its effects by a thorough use of the plow and cultivator.

The soil for corn must be dry, rich, and well pulverised. Neither strong clay or poor wet lands, will yield good crops of corn. Land cannot be too rich for it; and the fresher and unfermented the manure applied to it, unless on light sandy soils, the better it will be for the crop. A great error is committed in raising corn, from not having the soil sufficiently enriched. Corn is a gross feeder, and necessarily ranges over a great space in search of food. It has a large amount of stalk, leaves and grain to provide for in a few weeks, and its increase will be commensurate with the supply of food.

A clover ley or rich grass sod, is an excellent preparation for corn, with the addition of manure if required. But the manure should always be scattered broadcast, plowed, and well harrowed in. The roots will be certain to find it, and in consequence of its general diffusion and consequent gradual absorption by the

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crop, the development of the ear and grain will correspond with that of the stalk and leaves.

Harvesting.—If there be no danger of early frost, the corn may be suffered to stand till fully ripe; though, if the stalks are designed for fodder, they are better to be cut when the grain is well glazed, and this should be done in all cases where frost is expected. Scarcely any injury occurs either to the leaf or grain, if the corn be cut and stooked, when both would be seriously damaged from the same if exposed standing.

The stalks of corn ought never to be cut above the ear, but always near the ground, and for this obvious reason: the sap which nourishes the grain, is drawn from the earth, and passing through the stem enters the leaf, where a change is effected analogous to what takes place in the blood, when brought to the surface of the lungs, in the animal system; but with this peculiar difference however, that while the blood gives out carbon and absorbs oxygen, plants, under the influence of light and heat, give out oxygen and absorb carbon; this change prepares the sap for condensation and conversion into the grain. But the leaves which thus digest the food for the grain are above it, and it is while passing downwards that the change of sap into grain principally takes place. If the stalk be cut above the ear, nourishment is at an end; it may then become firm and dry, but it will not increase in quantity, while if cut near the root, it not only appropriates the sap already in the plant, but it also absorbs additional matter from the atmosphere, which contributes to its weight and perfection.

Uses of Indian corn.

The uses of Indian corn in this country are numerous, more so than any other grain. It is largely fed to fattening and working animals, but must be cautiously given to the latter and especially in hot weather. It is extensively manufactured into high wines and whiskey; it is converted into oil, sugar, molasses and starch to a limited extent, and is variously and largely applied to culinary and domestic uses. While green it is boiled and roasted in the ear, or it is cut from the cob and cooked with the garden or kidney bean, which forms the Indian *succotash.* When ripe it is

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hulled in a weak ley, or machine for the purpose, then boiled and known as hulled corn, a most convenient and acceptable dish in the frontier districts, remote from mills, and not despised by the citizen; or it is parched over the fire, affording a delicious lunch and a convenient provision for hunters, as *popped corn*. Hominy or samp is a favorite dish, and consists of corn broken or coarsely ground, the hulls blown off, and boiled in water, and hasty pudding or mush differs from hominy only in being made from fine meal. The meal may be compounded with milk and eggs into *johnny-cake*, *corn-bread*, *puddings*, *griddle-cakes*, and other delicacies universally esteemed for the table, and when scalded and mixed with the flour of rye or wheat it imparts additional sweetness to bread while it scarcely diminishes its proportionate nutritive properties.

Recipes for cooking corn in all its various ways.

The happiness, prosperity and reputation of a family depend in a very great measure on the judicious and prudential management of the household department. With economy and skill a family may be made comfortable, happy and respectable with one half the expense that is required with extravagance and mismanagement.

Indian Hasty Pudding.—The simplest and most common way of cooking corn meal is to put two quarts of water into a clean pot or sauce-pan, set it over the fire, adding a teaspoonful of salt, and when it comes to a boil, stir in a lump of fresh butter say about two ounces, then add (a handful at a time,) sufficient Indian meal to make it very thick, stirring it all the time with a mush-stick. Keep it boiling well and continue to throw in meal till it is so thick that the stick or paddle stands upright in it. Then send it to table hot and eat it with milk, cream or molasses and butter. What is left may be cut into slices and fried for breakfast next day.

Plain Johnny-cake.—Sift a quart of Indian meal into a pan, make a hole in the middle and pour into it a pint of warm water, adding a teaspoonful of salt; with a spoon mix the meal and water gradually into a soft dough, stir it very hard for a quarter of an hour or more, till it becomes light and spongy, then spread

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the dough smooth and evenly on a stout flat board, a piece of the head of a flour barrel will serve for this purpose, place the board nearly, but not quite upright, and set a smoothing iron or a stone against the back to support it; bake it well, when done cut it into squares, and send it hot to table, split and butter; some prefer syrup of molasses with it.

Hoe-cake.—Take an earthen or tin pan and half fill it with coarse Indian meal, which should be sifted in, adding a little salt; have ready a kettle of boiling water, pour into the Indian meal sufficient hot water, (a little at a time,) to make a stiff dough, stirring it with a spoon as you proceed. It must be thoroughly mixed and stirred hard. If you want the cakes for breakfast, mix this dough over night, cover the pan and set it in a cool place till morning; if kept warm it may turn sour. Early next morning, as soon as the fire is burning well, set the griddle over it and take out the dough a handful at a time, flatten and shape it by patting with your hands till you form it into cakes about the size of a common saucer and half an inch thick; when the griddle is quite hot, lay on it as many cakes as it will hold and bake them brown; when the upper side is done slip a knife beneath and turn them over; they must be baked brown on both sides. Eat them warm with butter, molasses or whatever suits best. They will be less liable to stick if before each baking the griddle should be greased with a bit of fat pork, stuck on a fork.

In America there is seldom a house without a griddle. This cake is so called because in some parts of America it is customary to bake it on the iron of a hoe stood up before the fire. It is better known by that name than by any other,

Indian Mush.—Have ready on a clear fire a pot of boiling water, stir into it by degrees, (a handful at a time,) sufficient Indian meal to make a very thick porridge, and then add a very small portion of salt, allowing not more than a teaspoonful to a quart of meal; the pot must be kept boiling all the time you are stirring in the meal, and between every handful stir hard with the mush-stick, (a round stick about half a yard long flattened at the lower end like a paddle,) as, if not well stirred, the mush will be

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lumpy; after it is sufficiently thick and smooth keep it boiling an hour longer, stirring it occasionally; then cover the pot and set it where it will simmer slowly for another hour. The goodness and wholesomeness of mush depends greatly on its being long and thoroughly boiled. It should also be made very thick. If well made and well cooked it is wholesome and nutritious, but the contrary if thin and not sufficiently boiled. Send it to the table hot and in a deep dish; eat it with sweet milk or cream, or with butter and sugar, or with butter and molasses. When cold it may be cut into slices and fried in butter or lard.

Indian-meal Gruel.—This is an excellent food for the sick. Having sifted some Indian meal, mix in a quart bowl three tablespoonsful of the meal with six of cold water, stir it smooth and press out the lumps against the side of the bowl, have ready a clean sauce-pan entirely free from grease, with a pint of boiling water, pour this scalding hot on the mixture in the bowl a little at a time and stir it well, adding a pinch of salt; then put the whole back into the sauce-pan, set it on hot coals and stir it well till it boils, making the spoon go down to the bottom to prevent the gruel from burning; after it has come to a boil let it continue boiling half an hour, stirring it frequently and skimming it. Give it to the invalid warm in a bowl or tumbler, to be eaten with a spoon; it may be sweetened with a little sugar, and when the physician permits some grated nutmeg may be added, also a very little wine.

Nice Johnny-cake.—Sift a quart of Indian-meal into a pan, rub two tablespoonsful of butter into it, add a small teacup of molasses, and a teaspoonful of ground ginger, and pour on by degrees sufficient warm water to make a moderately soft dough; it may be stirred very hard; then grease with fresh butter, small tin pans about 2½ inches in diameter and ¾ of an inch deep, fill them with the dough and bake with a strong fire. They must be well baked taking care that the surface does not burn while the inside is soft and raw.

Corn Bread.—Rub a piece of butter the size of an egg into a pint of corn meal, make it a batter with two eggs, and some new

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milk and a spoonful of yeast, set it by the fire an hour to rise, butter little pans as above and bake in an oven with a quick heat.

Excellent Corn-bread —Take three quarts of milk, if a little sour all the better, seven eggs, two ounces of butter, one teaspoonful of saleratus, and mix with corn meal to the consistency of a thick batter, and bake with a brisk heat.

Corn Batter-bread.—Take six table spoonsful of flour and three of corn meal, with a little salt, sift them and make a thin batter with four eggs and a sufficient quantity of milk, bake in small pans in a quick oven.

Superior Breakfast corn-cakes.—Take three teacupsful of corn meal, one cup of wheat flour, two of milk and one of cream, (or in the absence of cream a little butter,) one egg, one teaspoonful of salt, bake in small pans as above with a brisk heat.

Corn-meal Breakfast-cakes.—Mix over night a quart of Indian meal, a teacupful of wheat flour, a tablespoonful of salt, a quart of warm water; pour on gradually the warm water, and stir it in with a large spoon, so as to form a very soft dough, cover the pan and set it by until morning. In the morning thin the dough with another pint of warm water so as to make it into a batter, having first dissolved in the water a saltspoonful of saleratus or a bit the size of a hazle nut; beat the mixture hard then cover it and let it stand near the fire for a quarter of an hour before you begin to bake it. Bake it in thin cakes on a griddle, send them to table hot, and eat them with butter and molasses or honey.

Missouri Corn-cakes.—Sift three pints of corn meal into a pan, add a teaspoonful of salt, a tablespoonful of lard or nice drippings of roast beef, a teaspoonful of soda in a little warm water, make it into a soft dough with a pint of cold water, then thin it to the consistency of a moderate batter by adding gradually not quite a pint and a half of warm water, when it is all mixed, beat or stir it well for half an hour, then have the griddle over the fire, and when hot grease it with beef suet or a piece of salt pork. Put on the batter and bake quick, send them hot to table as fast as baked; eat them with butter, &c.

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These cakes are excellent and very convenient as they require neither eggs, milk or yeast. They may be baked as soon as mixed or they may stand an hour or more.

Indian-corn Biscuit.—Sift a quart of corn meal and a pint of wheat flour into a pan with a teaspoonful of salt and three pints of milk, mix them well, beat the whites of four eggs and the yolks separately in two pans, the yolks must be beat until very thick and smooth, the whites to a stiff froth that will stand alone by itself, then stir the yolks a little at a time into the milk, butter a sufficient number of cups or small deep pans, nearly fill them with the batter, set them immediately into a hot oven and bake them fast, turn them out of the cups and send them warm to table, pull them open and eat them with butter. They will puff up finely if at the last you stir in a teaspoonful of soda, dissolved in a little warm water.

Boiled Corn-pudding.—Mix one quart of corn meal with three quarts of milk, take care it is not lumpy, add three eggs and one gill of molasses. It must be put on the fire at an early hour to eat at dinner. The great secret of this pudding is tying the bag properly as the meal swells very much.

Farmer's Corn-pudding.—Set on the fire a large pot of water which must boil hard by the time the pudding is mixed. Put one quart of milk by itself into a sauce-pan and give it a boil; when it has come to a boil, pour it into a deep pan and stir into it a pint of molasses, then add by degrees three pints of Indian meal, and lastly a teaspoonful of ground cinnamon or ginger; have ready a pudding bag, dip it into boiling water, shake it out, then pour the batter into the bag, tie firmly, leaving about one third vacant as it requires room to swell; put the bag into the large pot of boiling water, cover it closely, and let it boil steadily for at least three hours, four will not be too long. While boiling it should be turned frequently; as the water boils away replenish it with more water kept boiling for this purpose in another kettle; on no account put in cold water as that will render the pudding heavy. Turn it out of the bag immediately before it goes to the table, and eat it with butter and molasses. It will be found excellent.

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Boiled Indian-pudding.—Three pints of corn meal, half a pound of beef suet minced as fine as possible, a quart of milk, half a pint of molasses, six eggs, three or four sticks of cinnamon broken small, a grated nutmeg. Having cleaned the suet from the skin and strings, chop it as fine as possible and mix it with the corn meal; boil the cinnamon in the milk till it is highly flavored, then strain the milk boiling hot into the pan of corn meal and suet, and add the molasses, stir the mixture very hard, cover it and set it away in a cool place; beat the eggs till quite light and add them gradually to the mixture as soon as it is quite cold, then grate in the nutmegs. Dip a thick square cloth into boiling water shake it out, dredge it with flour, and then spread it open in a deep pan and pour in the mixture, leaving one third of the space vacant allowing for the pudding to swell, tie the cloth very securely and to guard against the water getting into it, plug up the little cracks at the tying place by plastering on a bit of dough made of flour and water. Put the pudding into a large pot of boiling water, (having an old plate at the bottom,) and boil it six hours turning it often, and replenishing the pot when necessary with boiling water from another kettle. Serve it hot; eat with wine sauce, with butter and molasses, or with a sauce of butter, sugar, lemon juice and nutmeg, beaten together to a cream.

Baked Corn-meal Pudding—One pint of corn meal, half a pint of molasses, a quarter of a pound of butter, a pint of milk, four eggs, the rind of a large lemon grated, or teaspoonful of powdered cinnamon and nutmeg mixed. Boil the milk, sift the meal into an earthen pan, pour the milk over it and stir them well together; cut up the butter into a small sauce-pan, pour the molasses over it, set it on the fire and let them warm together till the butter is soft, but not oiled, stir them well, and mix them with the milk and corn meal, set the pan in a cool place; in a separate pan, beat the eggs very light, and when the mixture has become cold, add the eggs to it gradually, then stir in the spice and grated lemon-peel, stir the whole very hard; put the mixture in a buttered dish and bake it well; serve it up hot, and eat it with a sauce made of powdered white sugar and butter, seasoned with nutmeg and lemon or orange juice, and stirred together to a cream, or with a liquid sauce of melted butter, wine and nutmeg. This

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quantity of ingredients will make a small pudding; for a larger one, allow a double portion of each article, and bake it well.

Corn Cup Cakes—One and a half pints of yellow corn meal, half a pint of wheat flour, one and a half pints of sour milk (buttermilk is best), a small teaspoonful of saleratus, or soda, dissolved in warm water, two eggs, and a teaspoonful of salt. Sift the corn meal and wheat flour into a pan, and mix them well, adding the salt; if you have no buttermilk, or other sour milk at hand, turn some sweet milk sour by setting a pan of it in the sun, or stir in a spoonful of vinegar; take out a small cupful of the sour milk, and reserve it to be put in at the last; beat the eggs very light, and then stir them gradually into the milk, alternately with the meal, a little at a time of each; lastly, dissolve the soda or saleratus, and stir it into the cup of sour milk that has been reserved for the purpose; it will effervesce; stir it into the mixture while foaming, which should be a thick batter; have ready some tea-cups, or little deep tins, butter them well, nearly fill them with the batter, and set them immediately into a rather brisk oven. The cakes must be thoroughly baked all through; when done turn them out on large plates, and send them hot to the table.

Corn Crumpets—One quart of corn meal, half a pint of wheat flour, one quart of milk, one teaspoonful of salt, three eggs, two large tablespoonsful of fresh yeast. Warm the milk, sift the corn meal and the flour into a pan and mix them well, then stir them into the milk a handful at a time, adding the salt; beat the eggs very light in another pan, and stir them gradually into the milk and meal, add the yeast and stir the whole well, then cover it and set it to rise in a warm place; when it has become very light and is covered with bubbles, have the griddle ready heated to begin to bake the cakes, first greasing the griddle. For each crumpet pour on a large ladle full of batter; send them to the table as hot as possible; eat with butter to which molasses or honey may be added.

If the batter should chance to become sour by standing too long it may be remedied by stirring in a teaspoonful of soda or saleratus dissolved in a little luke warm water; then bake it.

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Baked Corn-pudding.—To one teacup full of corn meal add one quart of milk, three eggs and a little ginger. Bake one hour.

Rye and Indian Griddle Cakes.—Take one cupful of corn meal, two cups of rye flour, one egg, a little salt, and three spoonsful of soda and cream of tartar, one of soda and two of tartar, make a batter the same as for buckwheat cakes and bake on a griddle.

Rye and Indian Bread.—Take three pints of rye flour, one table spoonful of salt four teaspoonsful of soda and cream of tartar as above, one teacupful of molasses, one quart of boiling water, the whole to be mixed and thinned sufficiently with sweet milk.

Hominy is prepared by grinding or cracking white corn in a mill or mortar, then it is sized with riddles or seives of various sizes, and the hulls or chaff blown off. There are generally three sizes, big, middling and small hominy.

The following are a few of the many ways in which hominy may be cooked. One quart of small hominy will absorb about two quarts of water; the same quantity of meal will absorb about five pints of water. The coarser the hominy the longer it will require to boil it.

How to boil Hominy.—Wash in two or three waters, taking care each time to let them settle; when the water is first put on it should be well rubbed with the hands, in order to separate the husks or skins and flour if any arise, then put it in a sauce-pan with two quarts of soft water, slightly salted, (one teaspoonful to the quart,) and let it boil slowly two hours or more occasionally stirring it as soon as it begins to boil to prevent its burning. It may be boiled to any consistency that may be preferred, from that of mush to the dryness of rice, the latter is generally preferred. If any should be left from dinner, add a little hot milk or water, and one egg, and flour enough to give it consistency; bake on a griddle and you have a dish not inferior to that of rice.

Hominy Breakfast-cakes.—Boil two cups of small hominy very soft, add an equal quantity of white corn meal, with a little salt, and a large tablespoonful of butter, make it into a thin batter with three eggs and a sufficient quantity of milk, beat them all

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together some time, and bake them on a griddle or in waffle irons. when eggs are dear or scarce yeast makes a good substitute; put a spoonful in the batter and let it stand an hour to rise.

Hominy Dessert Pudding.—Wash a pint of small hominy very clean and boil it tender, add an equal quantity of corn meal, make into a batter with eggs, milk and a piece of butter, bake it like batter cakes on a griddle, and eat with butter, sugar or syrup: some prefer wheat flour instead of the meal.

Hominy Bread.—Break two eggs into a bowl and beat them from ten to twelve minutes, add by continually stirring, a teaspoonful of fine salt, four or five tablespoonsful of hot hominy, rendered nearly to the consistency of thick gruel with hot milk, one large spoonful of butter, and a pint of scalded meal squeezed dry. Make up the mixture into small loaves or rural cakes one and a half inches thick, and bake in a quick oven.

Hominy Pudding.—Boil half a pound of fine hominy in milk, add three quarters of a pound of sugar, and the same of butter, half a nutmeg, six eggs, a gill of wine and a little grated lemon peel. Bake in a dish.

Samp is corn hulled and broken into quarters either in a mortar or in a mill for the purpose. It is perfectly white, being made from pure white corn. It is sometimes divested of its outer skin by scalding in a white ley, and then dried, broken and winnowed. Having washed it through two or three waters pour boiling water on it, cover it and let it soak all night or for several hours, then put it into a sauce-pan, allow two quarts of water to each quart of hominy and boil it till perfectly soft, then drain it, put into a deep dish, add some butter to it and send it to table hot, (and uncovered,) to eat with any sort of meat but particularly with corned beef and pork. Many use it for a vegetable instead of potatoes. If any should be left it may be made the next day into thin cakes and fried in butter. To be very good hominy should be boiled four or five hours.

To Boil Indian-corn.—Corn for boiling should be full grown but young and tender and the grains soft and milky; if its grains are becoming hard and yellow it is too old for boiling. Strip the ears

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of their leaves and husks and the silk; it is best to leave one thickness of the husks on the ear, it keeps it hot longer and adds sweetness; put them into a large kettle of boiling water and boil it rather fast for half an hour or more, in proportion to its size and age. When done take it up, drain it, dish it under a cover or napkin, and send it hot. Before eating it rub each ear with salt and pepper and then spread it with butter. Epicures in corn consider it sweetest when eaten off the cob; and so it is, but before company few persons like to hold an ear of Indian corn in their hands and bite the grains off with their teeth; therefore it is more frequently cut off the cob into a dish, mixed with salt, pepper and butter, and helped with a spoon.

Green Corn Cakes.—Mix one pint of grated green corn with three tablespoonsful of milk, one teacup of flour, half a teacup of melted butter, one egg, a teaspoonful of salt, and half a teaspoonful of pepper; drop this mixture into hot butter by the spoonful, let the cakes fry eight or ten minutes. These cakes are nice served up with meats for dinner.

Green Corn Dumplings.—One quart of young corn, grated from the cob; half a pint of wheat flour sifted, half a pint of milk; six tablespoonsful of butter; two eggs, a saltspoonful of salt, the same of pepper; butter for frying.

Having grated as fine as possible, sufficient young corn to make a quart, mix with it the wheat flour, and add the salt and pepper. Warm the milk in a small saucepan and soften the butter in it. Then add them gradually to the pan of corn, stirring very hard, and set it away to cool. Beat the eggs light and stir them into the mixture, when it has cooled. Flour your hands and make it into little dumplings. Put into a fringing pan a sufficiency of butter (or lard and butter, in equal proportions), and when it is boiling hot and has been skimmed, put in the dumplins, and fry them ten minutes or more in proportion to their thickness. Then drain them and send them hot to the dinner table.

Green Corn Porridge.—Take young corn and cut the grains from the cob; measure it, and, to each heaping pint of corn, allow not quite a quart of milk. Put the corn and milk inio a pot, stir them

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well together, and boil them till the corn is perfectly soft; then add some bits of butter, dredged with flour, and let it boil five minutes longer; stir in at the last, some butter, yolk of an egg, and in three minutes remove it from the fire. Take up the porridge and send it to table hot, and stir some fresh butter into it; sugar and nutmeg may be added, if desirable.

Corn Oysters.—Three dozen ears of large young corn, six eggs, lard and butter, in equal portions for frying. The corn must be young and soft; grate it from the cob, as fine as possible, and dredge it with wheat flour. Beat very light the six eggs, and mix them gradually with the corn; then let the whole be well incorporated by hand beating, add a saltspoonful of salt; have ready in a frying pan a sufficient quantity of lard and butter, mixed together; set it over the fire, till it is boiling hot, and then put in portions of the corn mixture, so as to form oval cakes, about three inches long and nearly one inch thick. Fry them brown and send them to table hot. In taste they will be found to have singular resemblance to fried oysters, and are universally liked, if properly done. They make nice side dishes at dinner, and are very good at breakfast.

Corn starch Pudding.—Corn starch is now extensively manufactured at Oswego, N. Y., and for culinary purposes exceeds any other yet made, It is now extensively used throughout the United States.

To make a nice delicate pudding, to one quart of boiling milk add one teacupful of starch, one teaspoonful of salt, and three well beaten eggs; as soon as the milk boils, take it off, add first the starch, then the eggs; the starch to be mixed as for clothes. To be eaten with fruit, or a rich sauce; cream and loaf sugar beaten together, with a little wine, make an excellent sauce.

This is a very convenient dessert when a family is taken by surprise in having friends unexpectedly to dine, as it can be made after meats are served. By baking, it makes a delicate baked pudding.

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Minute Pudding.—To six tablespoonsful of starch dissolved, add three eggs; beat them thoroughly together; one quart of milk, a little salted, and when heated nearly to boiling, pour in the mixture of starch and eggs; stir briskly until it boils three minutes, and it is ready for use. Flavor with lemon, vanilla, or to your taste. For sauce, cream and loaf sugar beaten together, with or without brandy, or any other which may be preferred.

Baked Corn-starch Pudding.—Six tablespoonsful of starch, to one quart of milk, a little salted; dissolve the starch in a part of the milk; heat the remainder of the milk to nearly boiling, then add the dissolved starch; boil three minutes, stirring it briskly; allow it to cool; add three eggs and sugar; flavor to your taste, and bake half an hour.

Corn-starch Blanc Mange.—To one quart of boiling milk, add two table-spoons full of starch, thoroughly mixed with a little milk, and three eggs, well beaten; boil all together until sufficiently thick, stirring it constantly; sweeten and flavor to your taste; then turn it into moulds to cool.

Summer Succotash.—String two quarts of young green beans, and cut them into small pieces, half an inch long, and do not split them; have by you a pan of cold water, and throw the beans into it as you cut them; have ready, over the fire, a pot or sauce pan of boiling water; put in the beans and boil them hard near twenty minutes; afterwards take them up and drain them well through a cullender. Take six ears of young corn, full grown, (or eight or nine if they are not all large) and cut the grains down from the cob; mix together the corn and the beans, adding a very small teaspoonful of salt, and boil them twenty minutes; then take up the *succotash*, drain it well through a seive, put into a deep dish, and while hot, mix in a lump of butter the size of an egg, add some pepper, and send it to table. It is generally eaten with salted or smoked meat.

Fresh Lima beans are excellent cooked in this manner with green corn. They must be boiled for half an hour or more before they are cooked with the corn.

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Winter Succotash.—This is made of dried shelled beans and hard corn. Take equal quantities of shelled beans and corn, put them over night into separate pans, and pour boiling water over them; let them soak till morning, then pour off the water and scald them again. First boil the beans by themselves, and when they are soft, add the corn, and let them boil together till the corn is quite soft, which will require at least one hour; take them up, drain them in a seive, then put them into a deep dish, and mix in a large piece of fresh butter and a little pepper and salt. This is an excellent accompaniment to pickled pork, bacon or corned beef. The meat must be boiled by itself in a separate pot.

To preserve corn for cooking.—Take the corn when it is young and tender, and barely full grown, let it remain on the cob till it has been boiled from ten to fifteen minutes (not over) in a large pot of slightly salted water, that must be boiling hard when the corn is put in. When thus par-boiled, take it out; and when cool enough to handle, cut down the grains from the cob into a deep pan, with a knife; then spread out the grains in large flat dishes or shallow pans, and set them in an oven after the bread, pies, &c., are done, and have been taken out; let corn remain in the oven till it is all well dried; if the oven is heated every day, the corn may be put in a second time, when quite dry, and after it has cooled, put it into a large thick bag, tie the bag tightly, and hang it up in a cool dry room; when wanted for use, corn thus prepared will be found excellent for boiling in winter soup, or boiled by itself and drained, and sent to table in a vegetable dish to eat with meat, first mixing with it some butter and a little pepper and salt. It will boil as soft and taste as well as when fresh from the garden. It will be better for soaking all night in water before cooking.

Bakers who heat their ovens every day, would find it profitable to buy Indian corn in large quantities, and prepare it as above, to sell afterwards for table use. If corn is not young and fresh, it will require half an hour's boiling before it is dried in the oven.

The sweet corn (No. 9) is best for this purpose, and for all the foregoing dishes.

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TREASURER'S REPORT.

RECEIPTS.

1853.			
Feb'y 9.	Life members, annual meeting,...	$60 00	
	Members, do ...	178 00	
	Tickets at exhibition, ...	164 39	
			$402 39
	Interest on moneys loaned,.....		420 00
	From State Treasurer,.....		700 00
Mar. 5.	Bond and mortgage, $2,000, and int., $58.33,		2,058 33
August.	Temporary loans, less interest, $17.00,.....		1,083 00
	Bond and mortgage, $2,000, and int., $26 05,		2,026 05
Sept'ber.	Life members, State Fair,.....	$110 00	
	Members, ...	3,145 00	
	Tickets, ...	2,754 00	
		$6,009 00	
	Less counterfeit bills, ...	14 00	
			5,995 00
			$12,684 77

EXPENDITURES.

1853.			
	By paid premiums at winter meeting, (A.)	$686 00	
	By paid premiums at Utica and Rochester, (A.)	613 16	
	By paid premiums at Saratoga Fair, (A.).....	3,465 38	
			$4,764 54
	Expenses at winter meeting, (B.)		250 50
	Fair at Saratoga, (C.)		2,028 68
	Incidental and miscellaneous expenses, (D.)		173 92
	Printing and advertising, (E.).....		338 07
	Expenses of Museum, (F.).....		225 73

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Postages, (G.)		$149 02
Library, (H.)		75 79
Salaries and travelling expenses, (I.)		2,352 59
Surveys of counties, (J.)		421 00
Assignment bond and mortgage, (K.)		2 25
Loan account paid, (L.)		1,100 00
Balance to new account,		802 68
		$12,684 77
Funds invested in bond and mortgage,		$2,000 00
Medals and plate,	$211 35	
Premium books,	160 00	
		371 35
		$2,371 35

We certify that we have carefully examined and compared the above account, with the vouchers accompanying the same, and that the same is in all respects just and true.

ALBANY, *Febr.* 8, 1854.

L. G. MORRIS, *President.*
J. BEEKMAN FINLAY, *Vice Pres't.*
B. P. JOHNSON, *Corresp'ding Sec'y.*

(A.)—PREMIUMS PAID AT WINTER MEETING, 1853.

		Premiums.
No. 1.	Erastus Corning, jr.,	$20 00
2.	David Coonradt,	13 00
3.	David Coonradt,	26 00
4.	L. Jennison,	5 00
5.	Jas. T. McNamee,	3 00
6.	Ira Apthorp,	20 00
7.	Samuel Morgan,	6 00
8.	C. Pomeroy,	10 00
9.	B. McNiel,	23 00
10.	Benjamin Enos,	6 00
11.	O. Howland,	5 00
12.	Noah Hitchcock, jr.,	5 00
13.	H. Worden,	10 00
14.	Jeremiah Parker,	20 00

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No. 15.	Joshua Ballard,	$15 00
16.	Ira Rix,	20 00
17.	Albert Gurner,	15 00
18.	Elnathan Gazley,	8 00
19.	Daniel S. Baker,	54 00
20.	E. M. Bradley,	15 00
21.	Frederick N. Toby,	5 00
22.	O. Howland,	24 00
23.	Samuel Gowdy,	10 00
24.	William Felt,	15 00
25.	Augustus Ross,	20 00
26.	Robert Rome,	45 00
27.	James Brodie,	10 00
28.	C. W. Eells,	30 00
29.	Rufus S. Ransom,	17 00
30.	Patrick Downey,	9 00
31.	Sprague & Gilbert,	55 00
32.	Peter Crispel, jr.,	20 00
33.	Aaron Houghtaling,	8 00
34.	N. & E. S. Hayward,	8 00
35.	Michael Kelly,	5 00
36.	E. S. Bliss,	8 00
37.	Jurian Winne,	13 00
38.	Paris Barber,	10 00
39.	Benjamin Aikin,	10 00
40.	David Hess,	15 00
41.	Horace Clapp,	50 00
		$676 00

(A.A.)—PREMIUMS AND EXPENSES AT ROCHESTER AND UTICA.

No. 1.	Expenses of witnesses, &c., at Rochester,	$83 30	
2.	Paid for pig killed at Rochester Fair,	10 00	
			$93 30
3.	John A. Pitts, premium at Geneva trial of implements,	$45 00	
4.	W. Boardman and son (services for trial at Geneva),	5 15	
			50 15

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No. 5.	E. Corning, jr., premiums at Utica,..		$71 00	
6.	Aaron C. Johnson,	do ..	2 00	
7.	John Moore,	do ..	50 00	
8.	Roger Bamber,	do ..	10 00	
9.	Ellwanger & Barry,	do ..	34 00	
10.	Samuel Campbell,	do ..	10 00	
11.	O. Howland,	do ..	3 00	
12.	Henry Campbell,	do ..	2 00	
13.	T. P. Hart,	do ..	2 00	
14.	Luther F. French,	do ..	3 00	
15.	Henry B. Moore,	do ..	20 00	
16.	Moses Eames,	do ..	2 00	
17.	James Brodie,	do ..	87 00	
18.	J. Denio (superintendent of dairy),..		27 00	
19.	John R. Jones (sheriff's expenses incurred), ...		60 00	
20.	Noel J. Becar,.....		10 00	
21.	Luther Tucker, balance due as treasurer, ...		75 71	
22.	J. C. Collins, premium,.....		1 00	
				469 71
				$613 16

(A.)—PREMIUMS PAID AT SARATOGA, 1853.

		Premium.
No. 1.	Knowlton Howland, ...	$7 00
2.	E. P. Walton, ...	3 00
3.	William Simmons,.....	2 00
4.	Mary A. Seymour, ...	4 00
5.	Mrs. C. A. Buel, ...	2 00
6.	Caroline M. Hodgman, ...	1 00
7.	Joel D. Spencer,.	25 00
8.	J. C. Rouse,.	16 00
9.	Seth Whalen, ...	30 00
10.	John Jones, ...	3 00
11.	J. H. Case,.....	7 00
12.	John W. Crossman, ...	5 00
13.	Alex. B. Putnam,.....	1 00

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No. 14.	G. W. Herrick,	$8 00
15.	N. B. Ross,	5 00
16.	Mrs. C. M. Hoyt,	2 00
17.	Mary Morey,	7 00
18.	Hugh Brodie,	68 00
19.	Hezekiah W. Wilcox	30 00
20.	Amasa Burton,	3 00
21.	John Benedict,	7 00
22.	Edwin Clement	10 00
23.	R. McDowell,	9 00
24.	Nelson Richard,	5 00
25.	Mrs. M. L. Cowen,	3 00
26.	P. S. Baldwin,	5 00
27.	G. B. Powell,	15 00
28.	G. B. Powell,	6 00
29.	Seneca Daniels,	20 00
30.	O. S. Barbour,	2 00
31.	Mrs. T. Mabbitt,	18 00
32.	Sarah M. Davison,	3 00
33.	Mary A. Darrow,	3 00
34.	W. Denning,	1 00
35.	Seth Whalen,	8 00
36.	Z. B. Wakeman,	37 00
37.	Freeman B. Derrick,	8 00
38.	Joseph Daniels,	31 00
39.	W. H. Stratton,	1 00
40.	H. H. E. Purchase,	3 00
41.	Mrs. E. C. Pond,	5 00
42.	S. A. Benton,	2 00
43.	L. E. Smith,	7 00
44.	J. W. White,	20 00
45.	James Bigart,	5 00
46.	H. R. Farr,	10 00
47.	Betsey R. Voorhees,	19 00
48.	J. Bemmington,	5 00
49.	Alex. Denton,	10 00
50.	John Quinby,	15 00
51.	Janes, Beebe & Co,	5 00

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No. 52.	L. H. Colby,	$13 00
53.	Thomas Job,	8 00
54.	Elisha Dorr,	18 00
55.	Barnes Davies,	12 00
56.	Trim & Wicks,	5 00
57.	O. Howland,	68 00
58.	D. E. Hill,	15 00
59.	William Cook,	6 00
60.	Herman O. Hara,	13 00
61.	Theodore Backus,	9 00
62.	Daniel Rice,	15 00
63.	G. W. Platt,	3 00
64.	Bailey West,	6 00
65.	R. Lewis,	3 00
66.	R. L. Burtis,	3 00
67.	Jonathan Battey,	6 00
68.	John Morse,	43 00
69.	John W. Hamlin,	8 00
70.	Martha M. Runyon,	1 00
71.	E. W. Badger,	10 00
72.	E. P. Walton,	3 00
73.	H. L. Emery,	33 00
74.	Le Roy Mowry,	15 00
75.	Jane Ann Hairall,	17 00
76.	Warren, Swetland & Co.,	3 00
77.	William Wilson,	11 00
78.	James Demel,	3 00
79.	C. M. Davison,	1 00
80.	Erastus Corning Jr.,	105 00
81.	John H. Remmington,	5 00
82.	Silas G. Smith,	9 00
83.	Mrs. J. B Wizer,	5 00
84.	N. & E. S. Hayward,	33 00
85.	W. C. Van Orn,	30 00
86.	Daniel S. Curtis,	45 00
87.	T. M. Wilcox,	15 00
88.	Green & Pease,	15 00
89.	J. S. Eastman,	5 00

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No. 90.	D. C. Cally,....	$4 00
91.	J. B. Hoffmann & Co.,....	3 00
92.	Nathan Cole,....	5 00
93.	J. L. Bronson,....	2 00
94.	Thos. Bardwell,....	5 00
95.	E. Brinton,....	5 00
96.	Seeley & Hatch,....	6 00
97.	M. A. Hackley,....	2 00
98.	N. J. Becar,....	122 50
99.	Parmelia R. Dean,....	12 00
100.	E. & T. Fairbanks,....	20 00
101.	Geo. Warren,....	15 00
102.	William Tripp,....	25 00
103.	W. H. Southwick,....	33 00
104.	C. & W. W. Rockwell,....	6 00
105.	Daniel S. Curtis,....	15 00
106.	William S. Gypson,....	5 00
107.	Richard Schaffer,....	8 00
108.	L. T. Marshall....	6 00
109.	Mrs. Joel B. Noyes,....	33 00
110.	Edwd. G. Faile,....	25 00
111.	E. P. Prentice,....	108 00
112.	Daniel S. Curtis,....	26 00
113.	John W. White,....	15 00
114.	R. Mosher,....	15 00
115.	Marvin Alexander,,....	5 00
116.	D. Rice,....	2 00
117.	E. G. Alden,....	10 00
118.	Henry Lincoln,....	5 00
119.	S. H. Williams,....	3 00
120.	J. H. Caswell,....	15 00
121.	J. H. Tuckerman,....	5 00
122.	Luther Comstock,....	17 00
123.	Emery T. Seymour,....	5 00
124.	Adam A. Hoysradt,....	20 00
125.	D. C. Howe,....	10 00
126.	Remmington & Bowen,....	63 00
127.	M. L. Hungerford,....	14 00

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No. 128.	Delia B. Lamberson,	$3 00
129.	Reuben R. Barber,	10 00
130.	H. M. Eaton & M. H. C. Ingersol,	20 00
131.	E. K. Jones,	19 00
132.	Joseph Ashford,	15 00
133.	James A. Jackson,	5 00
134.	Sarah D. Wheeler,	14 00
135.	George Laske,	5 00
136.	L. R. Proctor,	10 00
137.	H. B. Howard,	10 00
138.	L. G. Morris,	277 50
139.	N. Culver,	15 00
140.	J. H. Vandercook,	3 00
141.	Harriet S. Brown,	3 00
142.	Charles H. Toll,	6 00
143.	Luther Bethune,	29 00
144.	George Campbell,	10 00
145.	E. Gazley,	26 00
146.	M. E. Olmstead,	3 00
147.	O. P. Newell,	15 00
148.	Chas. H. Bull,	2 00
149.	William Coleman,	10 00
150.	George W. Wilcox,	4 00
151.	J. Beekman Finlay,	40 00
152.	C. S. Wainwright,	60 00
153.	Amos T. Wood,	15 00
154.	T. H. Tompkins,	6 00
155.	William M. Olcott,	15 00
156.	John Ingersol,	8 00
157.	Warren W. Allen,	2 00
158.	Miss Louisa Hunter,	2 00
159.	John T. Andrews,	4 00
160.	C. E. Goodrich,	3 00
161.	William H. Young,	5 00
162.	Mrs. P. Bennett,	27 00
163.	Mrs. Chas. Fowler,	3 00
164.	W. W. Newcomb,	38 00
165.	Chas. W. Hill,	18 00

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No. 166.	J. W. Boyd,	$10 00
167.	Peter Crispell, Jr.,	18 00
168.	Hiram Sheldon,	76 00
169.	John B. Barrett,	16 00
170.	Joseph Haswell,	94 00
171.	John N. Herdman,	15 00
172.	R. C. Wheeler,	1 00
173.	Daniel S. Curtis,	10 00
174.	G. W. Herrick,	2 00
175.	Amos T. Wood,	21 00
176.	N. Culver,	2 00
177.	C. Van Benthuysen, prem. expenses for print'g,	202 63
178.	R. Lovett, bill for medals,	219 75
179.	S. Mix, for engraving,	3 50
180.	J. M. Smith,	11 00
181.	St. John Seeley,	2 00
182.	A. W. McKee,	10 00
183.	Thos. Bardwell,	5 00
184.	Miss Jordan,	5 00
185.	James Wilson,	26 00
186.	Eddy Dyer & Co.,	24 00
187.	Isaac Fowler,	3 00
188.	Darius Clizbee,	4 00
189.	D. Darling, premium expenses,	12 00
190.	Robert Lovett, medals,	56 50
191.	A. Frost & Co., premium on fruit,	27 00
		$3,465 30

B.—EXPENSES WINTER EXHIBITION AND ANNUAL MEETING, FEB. 1853.

No. 1.	Paid for use of lumber,	$59 65
	Carpenter work,	79 00
	Nails, locks, hooks, &c.,	11 35
2.	Night watch,	14 00
	Cartage,	2 00
	Use of sash,	50
	Superintendent,	28 00
3.	E. E. Platt, (sundry expenses,)	12 60

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4. W. A. Townsend, services as clerk,.....		$8 00
5. W. Woolford, "		4 00
6. D. R. Vanderlip, "		4 00
7. N. Ireland, "		2 50
8. Charles King, "		7 00
9. W. H. Bryant, "		6 00
10. Feed for poultry, &c., ...		90
11. Pruyn & Vosburgh (nails), ...		5 00
12. Police, ...		6 00
		$250 50

(C.)—EXPENSES OF FAIR AT SARATOGA, 1853.

Vouchers.			
No. 1.	Paid F. T. Hill, for glass ware, Floral Hall,.....		$7 00
2.	John Knickerbocker, horse hire for Superintendent, ...	$4 00	
3.	John Knickerbocker, saddle horse for Superintendent,...	6 00	
4.	Ellsworth & Co., horse and wagon for Superintendent,..	12 00	
5.	Stephen Dexter, livery bill for guests, &c.,.....	82 00	
			104 00
6.	Use of rope, Floral Hall, C. H. Cole, ...		5 25
7.	John Benedict, for use of lumber for building, ...	$25 00	
8.	John Benedict, for use of lumber for building, ...	1 84	
			26 84
9.	O. L. Sparks, carpenter work for building,.....		15 00
10.	Hustin McMillen, cartage boxes, tents, &c., to and from grounds, ...		16 00
11.	B. Huling, blank books for office, ...		88

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12.	J. A. Corey, for use of office, stationery, &c., before fair,..		$25 00
13.	J. M. Marvin, for sundry bills, expenses, ...		133 75
14.	Stephen Kimball, refreshment (per contract,)		500 00
15.	C. Van Benthuysen, printing hand bills, cards, &c.,.....	$269 37	
16.	John A. Clark, advertising in New-York papers, ...	19 00	
17.	G. M. Davidson, printing treasurer's receipts, ...	2 00	
18.	J. G. Young, advertising and printing, Saratoga,.....	8 75	
			299 12
19.	J. S. Weed, services as clerk in office, ...	$2 50	
20.	L. L. Lewis, services as clerk, and money paid, ...	41 00	
21.	John Goldwaite, services as clerk, ...	15 00	
22.	John Loudon, services as clerk,	15 00	
23.	R. S. Roberts " "	15 00	
24.	Wm. Platt, superintendent mechanics' department,.....	15 00	
			103 50
25.	E. H. Ireland, use horse and wagon, officers,.....	$15 00	
26.	W. D. Lawton, services as clerk,	12 00	
27.	Daniel Dunne, clerk in building, ...	15 00	
			42 00
28.	Thomas F. Honan, clerk in building,.....	$15 00	
29.	A. F. Emery, clerk in office,..	18 00	
30.	Charles King, clerk in Floral Hall, ...	15 00	
31.	Joseph Daniels, superintendent swine, ...	12 00	

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32.	S. A. Bunce, clerk in office,...	$27 00	
33.	Thos. J. Hyde, " " ...	27 00	
34.	E. A. Gage, " " ...	27 00	
35.	G. W. Platt, assistant superintendent, ...	18 00	
36.	L. K. Marshall, assistant in office, ...	35 00	
37.	M. L. Adams, clerk in office,..	15 00	
38.	J. S. Reynolds clerk in building,	18 00	
39.	Israel Denio, superintendent dairy department, ...	22 00	
40.	E. E. Platt, clerk in office,....	15 00	
41.	C. A. Clark, " "	15 00	
42.	A. F. Chatfield, superintendent Floral Hall,.....	24 00	
43.	W. M. Colburne, clerk, Floral Hall, ...	19 00	
44.	R. Thompson, clerk, office, (expenses,)	2 00	
45.	S. G. Smith, superintendent plowing, ...	16 84	
46.	L. E. Smith, superintendent domestic hall, ...	19 00	
47.	E. J. Huling, advertising and printing, Saratoga,.....	5 50	
48.	G. W. Cross, gate tender,....	7 50	
49.	Peter G. Clark, " "	7 50	
50.	M. Pulver, " "	7 50	
51.	H. H. Burhans, " "	10 00	
52.	D. D. Ireland, " "	10 00	
53.	Barney Wendall, " "	8 00	
54.	Isaac Burk, " "	10 00	
55.	John Coil, " " ...	7 50	
56.	N. Ireland, " "	10 00	
57.	M. Lansing, " "	7 50	
58.	C. Cammell, " "	10 00	
59.	L. Witbeck, " "	10 00	
60.	Wm. Carll, " "	7 50	
			478 34

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61.	C. Wendall, gate tender, ...	$9 00	
62.	J. G. Cobie, " "	10 00	
63.	John Keef, " "	10 00	
64.	Abin Witbeck, " " ...	9 00	
65.	T. R. Simmons, " "	10 00	
66.	F.R. Rockefeller," "	10 00	
67.	C. Waterbury, " "	7 50	
68.	George Butts, " "	7 50	
69.	Olney Card, " "	7 50	
70.	Norman Lee, " "	10 00	
71.	John Kittle, clerk, treasurer's office,.....	7 50	
72.	H. F. Smith, clerk, treasurer's office,.....	7 50	
73.	James Lansing, clerk, treasurer's office,.....	9 00	
74.	M. K. Bryan, clerk, treasurer's office, ...	9 00	
75.	G. M. Van Olinda, clerk, treasurer's office, ...	9 00	
76.	Nicholas Featherly, clerk, treasurer's office, ...	9 00	
77.	C. A. Kirtland, cashier, treasurer's office, ...	25 00	
78.	F. A. Knower, clerk, treasurer's office,.....	10 00	
79.	John Henry, clerk, treasurer's office,..... ...	5 00	
80.	C. C. Cheeny, clerk, treasurer's office,.....	10 00	
81.	E. H. Ireland, clerk, treasurer's office,.....	14 00	
82.	Wm. Holt, clerk, treasurer's office,.....	9 00	
83.	Daniel Holt, clerk, treasurer's office,.....	2 50	
84.	J. Field, putting up tents on ground,.....	10 00	
			254 50

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85.	E. C. Williams, for taking charge tent, ...	$20 00	
6.	L. T. Marshall, for rent of tent,	25 00	
			45 00
			$2,028 00

(D.)—INCIDENTAL AND MISCELLANEOUS EXPENSES.

No. 1.	Incidental expense of office,.....	$7 15
2.	Insurance on tent, ...	8 00
3, 4, 5, 6, 7, 8, 9, 10, 11, 12,	Incidental expenses,	110 61
13.	Use of gas, ...	3 04
14.	Storage of tent,.....	15 00
15.	Insurance on tent, ...	4 50
16.	Expenses of grass seed imported,.....	25 62
		$173 92

(E.)—PRINTING AND ADVERTISING EXPENSES.

No. 1.	C. Van Benthuysen,.....	$279 93
2.	C. & E. Comstock,.....	35 00
3.	Daniel Lee, (1851), ...	12 00
4.	Beardsley & Lyon, (1852),.....	1 25
5.	Albany Argus, ...	1 13
6.	D. C. Grove, (1852),.....	75
7.	Albany Express,.....	1 13
8.	Albany Argus, ...	2 13
9.	Evening Transcript,.....	1 50
10.	Albany Atlas, ...	3 25
		$338 07

(F.)—MUSEUM EXPENSES.

No. 1.	Townend Glover, models of fruit, ...	$86 00
2.	Work on cases &c., ...	24 46
5.	L. H. McChesney, bill for repairs,.....	3 76
6.	L. Geber, (seed boxes,)	5 00
7.	Gladding, bill for repairs to cases, glass &c.,..	22 44

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8. Boardman, bill for platform and repairs,.....	$43 76
9. Articles for museum, ...	4 31
10. Daguerreotypes of Presidents, ...	36 00
	$225 73

(G.)—POSTAGES.

Vouchers, No. 1 to 10,.....	$149 02

(H.)—LIBRARY EXPENSES.

No. 1 to 7, Books, ...	$58 91
8. Insurance,..	11 25
9. Library expenses, labels, &c.,.....	5 63
	$75 79

(I.)—SALARIES, TRAVELING EXPENSES &C.

No. 1. Balance of salary, 1852, ...	$15 83
Vouchers 2 to 13,.....	2,000 00
Assistant, vouchers 1 to 12, ...	300 00
Traveling expenses, vouchers 1 and 2, ...	36 76
	$2,352 59

(J.)—SURVEY EXPENSES.

No. 1. Analysis for surveyor,.....	$149 00
2. " "	10 00
3. W. C. Watson, ...	262 00
	$421 00

(K.)

Assignment of bond and mortgage,.....	$2 25

(L.)—LOAN ACCOUNT.

No. 1. Notes for $500 and $600 cancelled, ...	$1,100

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INSECTS OF ALGIERS,

FROM THE

MUSEUM OF NATURAL HISTORY OF PARIS.

(Confided to ASA FITCH, M. D., for the Agricultural Society of New-York.)

Through Mons. A. Vattemare's International Exchange, we have received insects, hurtful to agriculture, from Algiers—136 species—correctly named, from Milne-Edwards, Esq., Senior of the Faculty of Sciences, Administrator and Curator of the Collection of Entomology, Museum d'Histoire Naturelle de Paris. When in Paris, in 1851, we had an interview with Mr. Edwards, and received most cordial assurances, that he would with great pleasure exchange with us any thing which related to insects, injurious to vegetation, that might be desirable. We communicated to Dr. Asa Fitch, of Salem, Washington county, the proposal made, and he very kindly consented to prepare a case of insects, injurious to vegetation, in this country, and forward it to Mr. Edwards, for the Museum of Natural History. This we communicated to Mr. Edwards, through Mons. Vattemare, and we are greatly gratified at receiving this case of insects.

LETTERS FROM M. VATTEMARE AND MILNE-EDWARDS, ESQ.

(Extract of a letter from A. Vattemare to Prof. T. Romeyn Beck, dated Paris, Feb. 9, 1854.)

"A collection of insects from Algiers, hurtful to vegetation, &c., presented by Prof. Milne Edwards, in the name of the professors and regents of the Museum of Natural History of Paris. This collection, destined to the Cabinet of Natural History, is to be submitted to the Agricultural Society, and to the particular attention of Asa Fitch, Esq., whose important labors, concerning

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insects hurtful to vegetation, are most highly appreciated in Europe. The professors of the Museum of Natural History here, would be very thankful for a collection of the same nature from North America and particularly from New-York—specimens of the Hessian Fly, &c. The following is a translation of Prof. Milne Edwards' letter, transmitting this collection:

"'SIR—In accordance with your request to the administrator of the Museum, I have the honor to transmit to you a collection of insects, from Algiers, comprising 136 species, the description of which was published by Mr. Lucas, in his great work on Algiers, executed by order of the Government. I think this collection would be usefully placed in the hands of Mr. Asa Fitch. I therefore beg of you to submit it to the State Agricultural Society, (N. Y.), of which this able Entomologist is a member. I would likewise beg of you to obtain from your American correspondents, for the Gallery of the Museum, some specimens of the Hessian Fly, and other insects hurtful to Agriculture, in the United States.

"'I trust, sir, that you will consider this collection as another token of the interest felt by us, for your mission, relative to International Exchanges, and of the gratitude of the Administration of the Museum, for the services you have rendered to this establishment.

"'I have the honor to be,

MILNE EDWARDS,

Senior of the Faculty of Sciences, Administrator and Curator of the Collection of Entomology.'"

1. Cicindela maura Fabricius.
2. " moroccana Fab.
3. " littoralis Fab.
4. " barbara Lep.
5. " sardea Dejean.
6. " flexuosa Fab.
7. " littorea Fischer, *Goudoti* Dej.
8. " trisignata Illiger.
9. Drypta emarginata Fab.
10. Brachinus psophia Fab.
11. " scolpeta Fab.
12. Graphipterus luctuosus Dej.
13. " exclamationis. Fab.
14. Siagona rufipes Fab.
15. " europæa Dej.
16. Scarites lævigatus Fab.

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16. bis, Scarites arenarius Bonelli.
17. Ditomus capito Ill.
18. " clypeatus Rossi.
19. " sphærocephalus Olivier.
20. " barbarus Latreille.
21. " cornutus Dej.
22. Carabus morbillosus Fab.
23. " Varvasii Solier.
24. Scarites Pyracmon Bon.
25. Nebria complanata Linnæus.
26. " andalousiaca Rambur.
27. " rubicunda Schœnherr.
28. Apatomus rufus Rossi.
29. Licinus brevicollis Dej.
30. Calathus circumcinctus Germar.
31. Anchomenus pallipes Fab.
32. Agonum marginatum Lin.
33. " lugens Ziegler.
34. Pœcilus quadricollis Dej.
" bis, " numidicus Lucas.
35. Feronia hispanica Dej.
" bis, " Abax barbaricus Lin.
36. Broscus cephalotes Lin.
37. Acinopus giganteus Dej.
38. " picipes Ol. *megacephalus* Dej.
39. " sabulosus Ol. *obesus* Schœn.
40. Ophonus obscurus Fab.
41. " meridionalis.
42. Amara bifrons Ill.
43. Harpalus punctatastriatus Dej.
44. Onthophagus taurus Lin.
45. " punctulatus Ill.
46. Onthophagus Maki Ill.
47. Ateuchus sacer Lin.
48. " variolosus Fab.
49. Gymnopleurus pilularius Fab.
50. " flagellatus Fab.
51. Copris hispanicus Poiret.
52. Geotrupes daucei Gory.
53. Thorectes hemisphæricus Ol
54. " rotundatus Luc.
55. Oryctes grypus Ill.
56. Phyllognathus Silenus Fab.
57. Anomala Julii (*vitis* Fab)
58. Anisoplia floricola Fab.
59. Bubas bison Fab.
60. Onitis strigatus Erichson.
61. " furcifer Rossi.
" bis, Oniticellus flavipes Fab.
62. Trox perlatus Scriba.
63. Rhizotrogus dispar Buquet.
64. Hoplia bilineata Fab.
" bis, Amphicoma bombilius Fab.
65. " melis Fab.
66. Glaphyrus cardui Fab.
67. Cetonia squamosa Gory, Mulsant.
68. " morio Fab.
69. " squalida Lin.
70. Dorcus musimon Gene.
71. Pimelia scabrosa Erich.
72. " barbara Sol.
" bis, " Boyeri Sol.
" ter, " Duponti Sol.
73. Adesmia microcephala Sol.
74. Akis algeriana Sol.

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75. Akis italica Sol.
76. Jalodis fidelissima Hoffm.
77. Aurigena tarsata Fab.
78. Cæcalus Buqueti Gory.
79. Sphenoptera rauca Fab.
80. Acmæodera acuminipennis Luc.
81. Agrilus amethystinus Ol.
82. Anthaxia inculta Germ.
83. Scaurus dubius Sol.
84. " atratus Fab.
85. Tentyria inæqualis Dej. *excavata* Sol.
86. " bipunctata Sol.
87. Asida lævigata Fab. male.
88. " " female.
89. " silphoides Ol. male.
90. " " female.
91. Isocerus ferrugineus Lat., Fab.
92. Blaps magica Erich.
93. " caudata Sol.
94. " gigas Fab. *Gages* Ol.
95. Opatrum granulatum Luc.
96. " emarginatum Luc.
97. Cleonus oculatus Fab.
98. " excoriatus Ill.
99. Phytonomus circumvagus Chevrolat.
100. Sitones griseus Fab.
101. Purpuricenus Desfontainæi Fab.
102. Stromatium strepens Fab.
103. Hesperophanes sericeus Ol.
104. Cartallum ruficolle Fab.
105. Clytus Boblayi Brulle.
106. Stenopterus mauritanicus Luc.
107. Stenopterus præustus, var. Fab.
108. Niphona picticornis Muls.
109. Agapanthia, irrorata Fab.
110. " annularis Ol.
111. " cynaræ Germ.
112. " suturalis Fab.
113. Phytæcia virescens Panzer.
114. Odynerus stigmaticus Fab.
115. Anthophora atro-alba St. Fargeau.
116. " pennata St. Farg. male.
117. Colpa aurea Fab. St. Farg.
118. Campsomeris collaris Fab. St. Farg.
119. Anthocharis Doucei Poir.
120. Chlænius spoliatus.
121. " vestitus.
122. " auricollis.
123. " aratus Guerin.
124. " varvasii.
125. " agrorum.
126. " chrysocephalus.
127. Stenelophus vaporariorum Fab.
128. Thais hypsipyle Fab.
129. Pieris rapæ Lin.
130. Anthocharis cursoria Ochsenheimer.
131. Colias edusa Lin.
132. Lycæna alexis Lin.
133. Polyommatus Phlæas Lin.
134. Thecla rubi Lin.
135. Polyommatus ballus Fab.
136. Arge ines Dupouchel.

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Remarks upon the Insects named in the above list.

Whatever may be the future political destiny of ALGIERS, it may truly be said that *in science* France has there achieved *conquests which will endure*, and will contribute to the glory of her name in all coming time. Whilst the subjugation of that province was in progress, the specimens of natural history gathered and sent home by some of the officers of her armies, served to indicate the rich field for research which there existed; and immediately upon its becoming annexed to the French empire, a number of her men of science were commissioned and sent hither to make a full examination of its natural productions, and thus ascertain its resources. The results of this survey are embodied in the great work of M. Lucas, published by order of the government; and of the specimens collected, a portion of the insects have, through Prof. MILNE-EDWARDS, been presented to the museum of our State Agricultural Society. These are enumerated in the above catalogue, and I am requested to furnish such a notice of them as will give visitors to the museum, and others, some acquaintance with their character and habits. As no copy of the work of M. Lucas, in which the history of these insects is given, is accessible to us, we are only able to speak of their habits generally, from our acquaintance with other insects to which these are related. A reference to that work, moreover, would show whether, as we suspect, a mistake may not inadvertently have been made, in some instances, in the above list. Thus, No 57, the *Anomala Julii* of Fabricius has all along been regarded as a different species from his *Vitis*, though they have been entered as being synonymous. Specimens of *Vitis* in my cabinet, from the island of Corfu, would appear to be quite distinct from this Algiers insect; still, the vine-chafer of our own country (*Anomala atrata* Fab., *cœlebs* Germ., etc.) illustrates how very widely in this group individuals of the same species may vary from each other. Of No. 118 also, we observe that the *Campsomeris collaris* is described as a new species from the island of Java, by St. Fargeau (*Hymenopteres*, vol. iii, p. 498), nor does the insect before us correspond with the description of *Scolia collaris* given by Fabricius (Ent. Syst. vol. ii, p. 232). Of course all such doubts as these will instantly be resolved by a reference to the work of M. Lucas.

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The eight first species named in the above list pertain to the family of Tiger Beetles (CICINDELIDÆ), and are quite similar in their size, colors and marks to our American species, considerably numerous, belonging to the same genus.

The thirty-eight succeeding species (No. 9 to 43) and the eight near the close of the list (No. 120—127), belong to the family CARABIDÆ, one of the most extensive groups in this department of nature's works. Of these, we look with the most interest upon the two species of *Graphipterus*, this being a genus of insects peculiar to the African continent; and the white spots and stripes with which they are ornamented, are marks so unusual among the larger *Carabidæ*, that at first glance one would not suspect them to pertain to this family. With the still larger species of the allied genus Anthia (for specimens of which, my cabinet is indebted to Rev. David Irvine, late a missionary of the Presbyterian Board, in India), these insects show, in the marks alluded to, a relationship to the preceding family, and the gradual transition by which nature passes from one group to another of her works. Several of these *Carabidæ* are very like our American insects of the same genera; but it is rather remarkable that of the genus *Ditomus*, of which about two dozen species occur in the several countries bordering upon the Mediterranean and Black seas, we have no representative in corresponding latitudes upon this side of the Atlantic.

All the insects of these two families are carnivorous, attacking and devouring other insects. But though this is their general habit, it is now well settled that some of the species are injurious to fields of wheat, feeding upon the young plants and upon the grain in the ear. No. 36 of the above list, *Broscus cephalotes*, is one of these species. Though these two families have probably been more studied than any other insects, it is to be regretted that so little attention has been bestowed upon the habits of the several species in their larva and perfect states.

The twenty-eight next species (No. 44—69) pertain to the old Linnæan genus *Scarabæus*, which forms several families in systematic works at the present day. Of these insects, a portion feed

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upon leaves, others upon flowers, and others upon dung. Those pertaining to the genus *Amphicoma*, of which we here have two species, frequent flowers, it is supposed for the purpose of extracting their honey, whilst the hairiness of their bodies serves greatly to aid in conveying the pollen to the stigma, and thus rendering the flowers fertile. To the same family with *Hoplia*, *Anisoplia*, &c., pertains the cockchafer of Europe, the most common and destructive of all insects belonging to the order of the Beetles, and the compeer of which, we have in our American May-beetle. Experiments go to show that whilst the most powerful poisons have no effect upon these insects, they are readily destroyed by alkaline preparations, which at the same time promote the growth of the plants to which they are applied.

No. 70 belongs to the family of Stag Beetles (Lucanidæ), the larvæ of which mostly reside in rotten wood.

No. 71—75, and also 83—86, pertain to the family Pimeliidæ, of which we have very few species upon this continent, whilst they are numerous upon the borders of the Mediterranean and in the deserts of Africa. Little is known of their habits.

The seven next species (No. 76—82) belong to the Buprestidæ, one of the families of the Snapping Beetle, which is noted for the brilliancy of its colors. The larvæ of these insects live in the solid wood of trees, doing much injury to timber by the holes which they perforate in it. The mature insects are frequently found in lumber yards and in newly built houses, having made their escape from the wood in which their larvæ had resided. They are sometimes many years in attaining maturity and making their escape from their burrows. A white pine plank in the steps at one of the doors of my residence shows a hole perforated from within by a larva in the year 1838, these steps having been built twelve years before. In the tenth volume of the Linnæan Transactions, Mr. Marsham records the exit of a *Buprestis splendens* from the wood of a desk which had stood in one of the offices in the Guildhall, London, upwards of twenty years. A still more remarkable case has been reported in this country: an apple tree, transplanted from the farm of Gen. Putnam, by his son, to Wil-

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liamstown, Mass., was cut down when sixty-five years old, and a portion of it was manufactured into a table, from one of the leaves of which table "a strong and beautiful bug" ate its way out twenty years afterwards, a second made its appearance subsequently, and finally, at the end of twenty-eight years, a third made its appearance.

The six succeeding species, (87—94,) pertain to the family BLAPSIDÆ, numerous genera and species of which inhabit the African deserts, whilst in this country there are very few. Their habits have been but slightly investigated. One of the most common species in Egypt, Forskahl relates, is cooked in butter and ate by the women of that country, from the idea that it will make them become fat. Of the *Blaps mortisaga*, or Churchyard beetle, Dr. Pickells reports, (Trans. of Assoc. Physicians of Ireland, 1824—1828,) that at different times, as many as two thousand larvæ were discharged from the stomach of a woman, who was addicted to the superstitious practice of drinking daily a quantity of water, mixed with clay taken from the graves of two Catholic priests.

The species of *Opatrum*, (No. 95, 96,) reside in sandy situations, whilst most of the TENEBRIONIDÆ, the family to which they pertain, dwell in fungi and rotten wood, and others in flour, bran, meal &c. These last are the well known Meal-worms, (larvæ of *tenebrio*, *molitor*, *obscurus*, *curvipes*, etc.) of our granaries, flouring-mills and bake-houses. They are equally common in this country as in Europe. Nor are their ravages limited to the farinaceous grains. A small quantity of timothy and clover seed which remained in a pail after sowing, I found a twelvemonth afterwards, pervaded with and destroyed by larvæ and insects of *T. molitor*.

The four next species, (No. 97—100,) belong to the weevil family (CURCULIONIDÆ) so well known from the great mischief some of them do in stored wheat, rice, and other valuable seeds. Other species subsist upon the leaves, flowers and stems of vegetables. These are beetles, commonly of minute size, and with long slender snouts, which the insect employs to form a hole in which to de-

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posit its eggs. It is very unfortunate, and tends greatly to mislead and confuse those who are not conversant with this branch of science, that in this country, the name weevil, which belongs to these long-snouted beetles only, is currently applied to insects so widely different from them as are the wheat midge or wheat fly and the Angoumois moth. Two of these Algiers weevils, it will be seen, pertain to the genus *cleonus*, one of the species of which (*C. Linariæ*) forms gall-like excrescences upon the roots of the *Linaria vulgaris*, the snap-dragon or "butter and eggs," as it is most commonly designated in this section of the country. This plant was introduced into flower-gardens in this vicinity about twenty-five years ago, and has now become by far the most formidable weed with which we have to contend—taking entire possession of acres of our best fields and setting at defiance all except the most persevering and laborious attempts to exterminate it. We have often thought that if some of the insects of Europe which prey upon this plant, could be here introduced, it might prove by far the most economical and effectual mode of reducing this "officious foreigner" to its appropriate limits.

The thirteen succeeding species, (No. 101–113,) pertain to the family of long horned beetles, (CERAMBYSIDÆ,) insects generally of a slender, elegant form and beautifully ornamented in their colors. The larvæ of most of them, however, are pernicious to timber and fruit-trees, boring holes in the solid wood. Examples of this family of insects are tolerably well known in this country being the borers in our apple, locust, maple and other trees.

The wasps and bees (No. 114–118,) are insects whose habits are so well known as to call for no remarks in this hasty review.

The remaining species (No. 119, 128–136,) pertain to different families of the group of butterflies, each species of which, in its larvæ state, feeds upon the leaves of some one or more plants. Of these, the *Colias edusa* will be noticed as very like the common yellow butterfly of our meadows and which gathers in such numbers upon the muddy margins of pools of water. Its larvæ in common with those of the other species of this genus, subsists

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upon clover and other leguminous plants. And as this same species inhabits a district adjacent to us, it is a little remarkable that we never meet with it in Eastern New-York. Here all our specimens are of a pale yellow color, the tint of sulphur or of the canary bird, and pertain to the species named *Philodice* by Godart, which upon our side of the Atlantic occupies the place of the similarly colored *Hyale*, which is spread over the Old World, even to its easternmost confines, specimens of it having been sent me from Ningpo, China, by my friend Rev. M. S. Culbertson. Common with the *Philodice*, are individuals having the black border of both pairs of wings cut nearly or quite across by slender yellow lines which are the apices of the veins. These appear to be the *Colias Chrysothome*, var. A. of Boisduval, (*Lepidopteres*, vol. i, p. 643,) which he intimates may be a distinct species, but which we are more inclined to regard as a variety of *Philodice*. Occasionally also, specimens are found with us, having the whole upper surface of the wings dusted over with black grains though less abundantly on the disk of the upper pair, and with the black border wider and somewhat gradually shaded into the yellow color of the disk. These appear to coincide with Boisduval's description of *C. phicomone*, a species credited to the alpine districts of Europe and Siberia. Other specimens, very similar to these, are a trifle smaller and have the knob of the antennæ of a paler yellow, and brown on its upper side instead of black, and the yellow spots in the black border of the wings elliptic or oval instead of round. These I regard as the *C. nastes* of Boisduval, who received his specimens from Lapland and Labrador. In my collection is another New-York specimen much smaller than either of the foregoing, the wings expanding only one inch and a quarter. It is colored like *Philodice*, but the black border of the wings is much narrower, there is but a single silvery dot beneath in the centre of the lower pair, and the knob of the antennæ is pale fulvous, somewhat mottled with brown on its upper side. This I have ticketed *Colias santes* in my collection. We thus have in addition to the *Edusa*, what some will regard as five species of the genus *colias*, inhabiting the state of New-York. But these are all so very similar, and the several marks by which they are distinguished vary and gradually pass into each other to such an extent that it

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is very doubtful whether they can with propriety be regarded as anything more than varieties of two species, the *Philodice* and *Phicomone* of Godart, the latter having a row of yellow spots in the black border of the upper wings in both sexes, whilst the former has these spots in the females only.

ASA FITCH.

Salem, N. Y. August, 1854.

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COUNTY ASSOCIATIONS.

The returns which are herewith presented from the county associations show a most gratifying advance in the agriculture of the State. More systematic efforts are being made in every branch of farm husbandry, and the farmers are devoting their energies to the advancement of this great interest in a manner most creditable to them. The reports from several of the counties contain many valuable experiments, all showing that a spirit of inquiry is abroad, and that farmers are not unwilling to adopt suggestions which experience and science have proved most advantageous to their best interests.

The increased attention paid to drainage is producing most gratifying results. Better crops are produced, less liability to damage from insects and from the winter; and in almost every instance the returns show that the outlay is greatly overbalanced by easier tillage and more abundant crops.

The improvement in dairy products is most marked, as well as a very considerable increase in the yearly products per cow, both of butter and cheese. The inquiry as to the breed of cattle best adapted to the dairy is receiving attention; and the general opinion is, that our best native cows, which are superior as milkers, with a cross from a Short Horn, Ayrshire or Devon bull, produce the best cows for the dairy. While the milking qualities are generally retained, their aptitude to fatten more readily, when no longer useful for the dairy, is a decided advantage, and will, eventually, it is believed, be generally adopted in our best dairies. Care should be had in selecting the male animal, as one descended

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from a good milking stock will prove far more valuable than one selected without reference to this quality.

Guenon's system, by which the milking qualities of cows are ascertained, is receiving much attention; and so far as we have been able to ascertain, the opinion of discreet dairymen is decidedly in favor of it, as in the main a reliable test.

The secretary visited several of the county societies, and attended their fairs, and was most happy to find that every year is adding to the tried and efficient friends of the cause. The correspondence of the society also shows that a very great desire is manifested in every county for increased knowledge of the best systems of husbandry, as well as the means of using manures and seeds best adapted to the various sections of the State.

Two new county societies have been organised during the year, and are very efficient organizations, producing most valued results, and enlisting a new class of farmers in the cause of agricultural improvements.

The demand which has arisen from the establishment of several new linen factories in the State for flax, has caused much inquiry in relation to the culture of this crop. A report from a committee, at the annual meeting, in relation to flax culture, contains valuable suggestions, which, it is presumed, will call the attention of farmers to the subject. The lecture by *Professor Wilson*, on the same subject, delivered before the society, at Saratoga, is one of very great interest, and our farmers will do well to examine it with care, giving, as it does, the most reliable information in relation to the culture of flax.

We desire to call particular attention to the reports from the following counties, which contain documents of permanent value, and many of them of great interest and importance. They will well repay a careful perusal, and will command, as they deserve, the careful attention of every farmer: Albany, Erie, Chemung, Herkimer, Jefferson, Livingston, Madison, Monroe, Niagara,

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Oneida, Onondaga, Ontario, Oswego, Queens, Rensselaer, Rockland, St. Lawrence, Seneca, Steuben, Ulster, Wayne, Westchester, Yates.

ALBANY.

It had long been a source of regret to many very intelligent and progressive farmers of the county, that there was no combined action for agricultural improvement, that the resources of the county were so inadequately developed, and that what progress had been made was not sufficiently widely known to incite any wide-spread emulation. Convinced, as many were, that we had the latent elements of agricultural growth and prosperity in our midst, that the county was rich in all that constitutes successful husbandry, it was decided to make an effort to form an agricultural society, which should bring into union of feeling and concert of action, the farmers who were laboring for improvement, and thus foster the spirit of progress.

Pursuant to a call by Robert Harper, clerk of the county, a public meeting of the farmers was held at the State Agricultural rooms, in Albany, April 14, 1853. JAMES W. JOLLY, Esq., of Coeymans, was called to the chair, and JOSEPH WARREN, appointed Secretary. A committee were appointed who presented a suitable constitution and by-laws for the government of the society, and also the following board of officers.

President, James W. Jolly, of Coeymans; Vice-President, Hon. B. P. Johnson, of Albany; Secretary, Joseph Warren, of Albany; Treasurer, E. E. Platt, of Albany; Managers, Dr. Herman Wendell, Albany; Elias Milbank, Bethlehem; Christopher Batterman, Guilderland; David Callanan, New Scotland; D. D. T. More, Watervliet; Henry A. Van Wie, Berne; James Blodgett, Coeymans; Dennison Crary, Knox; Levi Shaw, Rensselaerville; I. Verplanck, Westerlo.

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A committee were also appointed to draft a premium list, and another to visit the several locations offered in the county for the holding of the first annual fair, and report to the executive committee. This tour of the county brought to light several facts which are worthy a place in this report.

The first is, that the scenery of the county is remarkably beautiful and picturesque, and of so varied a character, that one cannot weary of it. There are the rich meadows along the banks of the Normanskill, little isolated hills jutting up in solitary beauty, and then again forming themselves into a mountain range, stretching away for miles, in bold mural declivities, and supporting a luxuriant growth of forest trees, and a mass of verdure unrivaled in any portion of our land. But the beauty of the Helderbergs, as you wind your way near their base, is nothing compared with the view from their summit. The Catskill mountains form a splendid back ground to the landscape in one direction, while the undulating country between, spotted here and there with groves, farm houses, and cultivated fields, made, in the light of a clear May day, a most lovely picture. The country on the east bank of the Hudson, can be seen reaching away into the blue distance, and on every side there is something to attract attention and awaken admiration.

But Albany county has something more than the beauty of its scenery to recommend it. It affords some of the best farming lands in the State, and a proper degree of intelligent industry will develope this natural fertility to an extent quite unprecedented in the agricultural history of the county.

For some eight or ten miles from Albany, in a southerly direction, the soil is of a light, sandy nature, and with underdraining, might all be made productive. The low places where the water stands and ruins the crops, could, by draining, be changed into warm, strong soil. As you approach the mountains, the soil changes to a rich loam, formed by the decomposition of the limestone, sandstone and shale, of which the mountains are composed, and which is admirably adapted to all the purposes of agriculture. The geological structure of the mountains, and the many

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curiosities which are to be seen at every step, we have not time or space to glance at. But we doubt whether a more fertile soil than that which lies in the valleys, and along the slopes of the hills, as you rise towards the Helderbergs, can be found in the State. The land up to the very summits of the hills, is susceptible of cultivation, and there is less waste territory than in most counties. In some sections, ledges of rock crop out or lie very near the surface, which makes the soil rather shallow, but yet of sufficient depth to afford good pasturage.

Some of the finest farms we have ever seen, whether situation and general appearance, or richness and variety of soil be considered, may be found in Bethlehem, New Scotland and Coeymans, while Watervliet and Guilderland are in no respect inferior. The towns of Westerlo, Rensselaerville, Berne and Knox, furnish many excellent grazing and grass growing farms; and in most instances, the land which is called "too cold and sour" for tillage, might be made the best land by draining and cultivation. In the first named towns we were informed that farms were valued at from $60 to $85 per acre, and in some instances could easily find purchasers at higher prices. In the last named, land is held considerably lower, owing to a greater distance from market, and local causes; but very many farms, for general purposes, are fully equal to any in the county.

The finest stone for building purposes and walls, abounds in the county, and can be procured at a slight expense. Upon some farms, stone walls were the only fences to be seen; and we could not but admire the solid, substantial appearance which they present. In many cases these flat stones might be used to great advantage for drains, instead of tiles.

We were gratified to learn that quite a number of farmers are beginning to underdrain their land, and in all cases the results have been such as to induce them to continue the work as fast as other farm labor will permit. In some instances, the increase of crops in the first two years, has more than paid the entire expense of laying the tile, while the soil is claimed to be doubled in intrinsic value. Mr. DAVID CALANAN, of New Scotland, the

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enterprising manager of the agricultuaal society for that town, is improving his excellent farm by underdraining, and we also saw here the most approved agricultural implements, which, by the way, were not in very general use in most parts of the county.

The appearance of thrift which prevails in the county surprised us. We saw very few neglected farms, decrepid fences and dilapidated buildings. On the contrary, the farm houses are generally neat and commodious, and frequently tasteful, the barns and outbuildings are capacious, and give indubitable evidence that the farms produce the wherewithal to fill them. Wherever a new dwelling has been erected, it is invariably in a style superior to that which prevails in most sections of the country, and considerable taste is manifested in the disposal of trees and shrubbery around the best residences. Such improvements are pleasing indications of competence, and also of a degree of refinement. There is something contagious about taste, and we expect to see a constant advance in this respect from year to year.

Though we were pleased to learn that a majority of the farmers in the county are becoming owners of their soil, and are money lenders instead of money borrowers, there are comparatively few farms which are cultivated with that care and skill which are necessary to the highest profit, and the greatest improvement of the soil. The lack of ambition and emulation among the farmers of the county, and the want of information on subjects of agricultural reform, have been heretofore the holdbacks to progress. But evidences of increasing spirit and a true farmer's pride, are not altogether lacking, and we trust that the agricultural society which has just been formed, will do much to awaken the attention and direct the energies of the farmers to higher modes of cultivation. We do not over-estimate the capabilities of the soil, in saying that Albany county can grow as large crops, and furnish as marked examples of superior culture as any county in the State, if the resolution to develop her resources be at once adopted and carried into effect. That such a determination exists, the annals of the New-York State Agricultural Society at present show. The first premium on wheat and corn, and the

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second on rye, were taken at the winter exhibition of the State society, in 1854, by Col. Levi Shaw, of Rensselaerville, whose attention was drawn to the subject by the formation of a county society.

After a careful survey of the several locations offered for the holding of the first fair, the committee resolved to locate it at Bethlehem Centre, and to hold it on the 4th, 5th, and 6th days of October. Committees were appointed in every town for the purpose of obtaining members, and distributing the premium list offered by the society. Public meetings were also held in different sections of the county, for the purpose of awakening more general interest in the subject of agricultural improvement and associated effort, which were addressed by Hon. B. P. Johnson, Professor Woolworth, of the State Normal school, and the secretary. As the result of this thorough canvassing of the county, something over 500 members were obtained previous to the time of the fair.

The First Annual Fair of the Society took place at Bethlehem Centre, about three and a half miles south of the city, Oct. 4, 5 and 6, 1853. The grounds, comprising six acres, were enclosed in a suitable board fence; the State Society's large tent was procured for the exhibition of articles of domestic manufacture, fruits, flowers and vegetables; a fine ring was graded for the display of horses; coops were erected for the poultry: suitable fixtures prepared for the fastening of cattle and horses; pens for sheep and swine, and a small business office was hastily put up. The judges had previously been appointed by the executive committee, and were, with one or two exceptions, exclusively from the county.

Notwithstanding the weather was unpleasant during the three days of the fair, being windy, cold, and slightly rainy, there was a large attendance, and the excellence of the show in the several departments, surprised even those who contributed to it, while those who had expressed their disbelief in the possibility of an Agricultural Society in the county, confessed that our farmers had long been deprived of honor, which was justly their due.

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In the stock department there were 122 entries. The whole number of horses on exhibition was 96; of cattle 107; of swine 29; of sheep 48; of poultry 108. The amount of premiums awarded in this department, was $285.00. Almost all the improved breeds of cattle were represented at the show, while the number of native cattle, and especially of dairy cows, was small. The same remark applies with equal force to the show of sheep and swine.

In the department of fruit, vegetables, flowers, plants, and dairy products, there were 81 entries. The show of fruit and vegetables was large and in every respect creditable to this or any other county. There was very little competition for the premiums offered for the products of the dairy, and the statements accompanying the samples, were not made with the accuracy, which is desirable. The amount of premiums awarded in this department, was $43.00.

In the ladies', manufacturers', and miscellaneous department there were 110 entries, and the amount of premiums awarded, was $129 00. The show in this department was one of the most interesting features of the fair, and a goodly degree of taste and skill was manisfested in the useful and ornamental articles, which were presented.

The whole number of exhibitors at the First Annual Fair, was 313, and the whole amount of premiums awarded, was $457.00.

An address was delivered on the afternoon of the last day of the Fair, by Amos Dean, Esq., of the Law Department of the University of Albany. His remarks were made in the open air and ex tempore, but they were very practical, and were listened to with marked attention by a large audience.

After the address and the reading of the award of premiums, an exhibition of horsemanship by young ladies took place. Four prizes were offered, namely, a silver goblet, $15; a silver cup, $12; a silver cup, $9; silver spoons, $6; and a fourth prize of silver butter knives, $3, was awarded by the judges. Five young ladies entered the ring, and premiums were given them; not for

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the speed of their riding, but for the ease and dignity with which they sat their horses, and the skill they displayed in managing them. No one seemed to question the propriety of the display; and all conceded that it was an attractive feature, which it would be well to continue, in connection with the fairs. As certainly as horseback riding is a healthy exercise, and that to sit and manage a horse well, is an accomplishment for a lady to be proud of, so certainly is it desirable to encourage a generous rivalry in equestrianship.

The annual meeting of the society took place at the State Agricultural Rooms, on the first Wednesday of January, 1854. Premiums were offered for farm crops and samples of grain, but owing to the late season at which the premium list was published, there was little competition for them. The president of the society, James W. Jolly, exhibited samples of oats and peas, with the required statements, and to him was awarded the first premium in the respective classes.

The treasurer's report was received, showing the whole amount of receipts for the year to be $1,252.85, and the whole amount of disbursements to be $1,064.00, leaving a balance in the treasury of $188.85.

The following officers were elected for 1854: President, James W. Jolly, Coeymans; Vice-president, Hon. B. P. Johnson, Albany; Secretary, Joseph Warren, Albany; Treasurer, E. E. Platt, Albany; managers, Joseph Cary, Albany; Elias Milbank, Bethlehem; Luman Lobdell, Berne; A. E. Willis, Coeymans; C. Batterman, Guilderland; Dennison Cary, Knox; Joseph Hilton, New-Scotland; Levi Shaw, Rensselaerville; A. Osborn, Watervliet; H. E. Robbins, Westerlo.

The utmost good feeling and a firm determination to sustain the society were manifested at the meeting. The success which attended the first fair is a matter of congratulation and just pride to every one interested in the progress of the agriculture, and the development of the industrial resources of the country. No one now questions whether Albany county is capable of maintaining an agricultural society which will be a credit to herself and com-

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pare favorably with her sister counties. Greater efforts will be made the coming year to enlist the mass of the farmers in the society, and especially to encourage competition for the premiums on farm crops, and for the best farms.

JOSEPH WARREN, *Secretary.*

ALLEGANY.

The proceedings of the Allegany County Agricultural Society, for 1853, have varied very little from former years..

Many of our most influential farmers neglect to enrol themselves as members, from some cause unexplained; while the merchants and professional men, who are not concerned directly in the cultivation of the soil, show a commendable liberality.

Although, as has been observed, many of our best farmers hold themselves aloof from the society, we have no doubt of the good influence it has upon the farming community. Our annual fair was well attended. The exhibitions, though perhaps on an average not superior to former years, were highly creditable.

The receipts of the society, during the year, has been as follows

Cash on hand, January 1, 1853,.....	$258 09
received from members,.....	108 00
2 books,.....	1 75
from State Treasury,.....	93 00
	$460 84
Expenditures:	
Paid premiums,.....	246 97
Balance,.....	$213 87

The officers chosen for the next year, are, Charles Benjamin, of Centerville, President; J. J. Rockafeller, of Angelica, Secretary; Joseph Lockhart, of Angelica, Treasurer.

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The agricultural productions of this county are varied. The northern and north eastern towns produce the most grain, while the middle and southern seem best adapted to grass; still, upon the whole, there is a great improvement among farmers, in quality and quantity of products of the farm, and our march seems to be onward in everything pertaining to agriculture.

CATTARAUGUS.

The Agricultural Society of this county has been organized and in successful operation for about fifteen years, during which time a warm interest in its welfare has been taken by the farmers and mechanics of the county, and the benefits arising from it, are seen in the continual advancement of the agricultural interests of the county. The last annual fair of the society was held at Randolph, on the 14th and 15th days of September, 1853; and, although this county is comparatively new, and, until quite recently, the inhabitants in many parts of it, have given more attention to lumbering than farming, yet the display of cattle, horses, swine, grain, garden vegetables, fruit, fowls, agricultural implements, domestic manufactures, &c., &c., is rarely excelled in any of the older counties of the State.

The list of premiums for 1853, was much greater than any year before, and the competitors much more numerous.

The first day of the fair was devoted to the reception and arrangement of the articles for exhibition, trotting match, &c., &c.

The second day, in the forenoon, the judges made their reports, &c. In the afternoon the plowing match came off, which was a very spirited contest, witnessed by a large number of people, who manifested the deepest interest. The society offered premiums for "the best specimen of female equestrianism." Several ladies entered the field as competitors. This was a novel and interesting feature of the fair, and received the unanimous approbation of

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the thousands who witnessed the ease and grace, manifested by the competitors in their various feats.

The annual address was delivered in the afternoon of the second day of the fair, by Oscar W. Johnson, of Fredonia; it was a very able and well timed production, and was extensively read in this and adjoining counties.

FRUIT.

The committee upon fruit report, that, from the very fine display of peaches and other fruit, Cattaraugus may well compete in fruit culture with any of her sister counties. There was also a large variety of other specimens, which did credit to the producers.

HORSES.

The exhibition of horses was highly creditable to the county, and a gratifying evidence of the emulative spirit, and degree of progress that characterize its citizens. Cattaraugus may well claim rank with any of the older counties of the empire State in this department of the exhibition—a department eminently important to the healthy progress of agricultural pursuits.

Amount of money received for membership and for admission to the tent of the fair, for 1853,.....	$216
Amount received from the State,.....	86
	$302

Officers for 1854: — Cyrus L. Shepherd, President; Lorenzo Stratton, Vice-president; John C. Peabody, Secretary and treasurer.

ASAHEL CONNELLY, *President.*

WM. H. HENDERSON,
Secretary.

CAYUGA.

The last annual fair was held at Springport, but owing to the location, the receipts were small, and the fair not equal to the former ones in amount and quality of articles exhibited.

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Receipts.

From last year,.....	$330 96
Annual fair,.....	349 00
Amount from Springport,..	80 00
From the State,.....	151 00
	$910 96

Premiums and expenses,.....	$566 95
Amount in treasury,.....	344 01
	$910 96

Officers for 1854.—John S. Clarke, President, Mentz; H. H. Bostwick, Treasurer, Auburn; John R. Page, Corresponding Secretary, Sennett; Luman Capen, Recording Secretary, Springport.

CHAUTAUQUE.

The executive committee met in June, and agreed upon a premium list, and made arrangements for the fair, and for securing memberships, &c. The fair came off at Stockton, Sept. 27th and 28th, and was exceedingly well attended. Three hundred and ten persons attached themselves to the society by membership; the list of members showing that all parts of the county were unusually well represented. On the first day the weather was very fine, and everything looked flourishing. A bountiful display of in door articles, tastefully arranged in a well planned tent, gave additional interest to the exhibition.

The business hour of the day having arrived, the examining committees were appointed, and other business of the society transacted. It was then voted that the next fair be held at Mayville, and the following officers were duly elected for the ensuing year: Cyrus Underwood, President, Mayville; John F. Phelps, Secretary, Mayville; William Gifford, Treasurer.

The second day opened most unpropitiously; but in the midst of a drenching rain, twelve plowmen took the furrow at an early

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hour, to compete for the premium on plowing; seven received premiums. The report of the committee was an interesting document. I would say here of other reports, we had several excellent ones, whose publication would do no discredit to their authors or the society. The unfavorable weather continued through the day, and doubtless prevented hundreds of people from attending, but as it was, the village was well thronged, especially at the hour of the annual address, which was delivered by Hon R. E. Fenton, member of Congress from this district. It was an excellent production, and was immediately and unanimously ordered to be published in pamphlet form and distributed, which has been done.

The whole number of articles entered for competition was about 500, comprising an excellent variety of stock, and outdoor and indoor articles.

The holding the fair at a small village like ours, although very centrally located, was regarded by many as an experiment. But I think I may safely say, that no doubt exists any longer on that question, but that the exhibition, in all its details, was every way creditable not only to the society but the citizens of the town. On this subject I ask leave to quote a sentence or two from one of the county papers, of date Sept. 30th: "Too much credit cannot be awarded the citizens of Delanti and the town of Stockton, for their praiseworthy exertions throughout. Their utmost energies have been used to produce a creditable exhibition, while their free hospitality, rather an unusual feature on such occasions, knew no bounds In the name of thousands, we tender them public thanks for their very good management and generous treatment."

By the courtesy of the late treasurer, R. L. Carter, Esq , I am enabled to append a brief abstract of the financial matters for 1853, as follows:

Receipts.

From officers of 1852,	$151 48
Tickets sold,	164 13
Membership fees,	310 00

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State Treasurer,	143 00
Use of tent,	10 00
	$778 61

Expenditures.

Premiums thus far paid,	$475 00
Expenses, printers, &c.,	170 67
Balance on hand,	122 94
	$778 61

The whole amount of premiums awarded was $592.50, besides books and papers. All which is respectfully submitted.

S. ELLSWORTH,
Secretary.

CHEMUNG.

The annual fair of this society was held at Horseheads, on the 6th and 7th of October; the exhibition evinced an increasing interest in agricultural reform highly complimentary to the farmers, mechanics and industrial interests of this rapidly improving county. The stock on the ground was of a decidedly improved character, among which was a full bred Durham bull from the stock of Col. Sherwood, owned by Morris Bennett, Esq , of Bigflats, which perhaps has few equals in the State. From the general interest manifested, we indulge the hope that Chemung will in time become a strong competitor for agricultural honors at our State fairs.

The following will illustrate the productiveness of soil and skill of our farmers:

Wheat. Abm. Rockwell best acre of wheat, 40 bushels and 12 quarts per acre. Oats. William Johnson, best acre of oats, 93½ bushels per acre. Other crops are not extraordinary, and hence omitted.

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The plowing match was the best we have ever had, and evinced a decided improvement in this important branch of agricultural skill.

The address was delivered by Dr. Spence of Yates county. The marked attention of a large audience was not only complimentary to the speaker, but justifies the opinion, that not only an increased interest in agriculture and the industrial arts prevails in this county, but that the intelligent and industrions farmers are determined not only to be second to none in the products of the soil, but are alive also to the necessity of increased facilities for giving their sons a thorough, scientific and practical agricultural education, and that they will not only lend their influence in establishing, but their means in endowing institutions where educational facilities shall be afforded, adapted to the wants of the age, and such as will afford to the eight hundred thousand children in the common schools of our State, opportunities for continuing their education, instead of being compelled as now, to discontinue their studies and leave the schools at the early age of from 12 to 15 years, to learn a trade or labor upon a farm, and hence their education stops before they have fully mastered the elementary branches introduced in our common schools.

This great defect in our educational system, demands that schools be established upon farms, with mechanic shops attached, where our *common school system*, of instruction may be continued, in connection with the practical business of life, so as to afford all not only an opportunity of acquiring the elementary branches, but of obtaining either a scientific and practical knowledge of agriculture and all that pertains to the business of farming, or of learning a trade while obtaining an education.

By requiring all to labor, on the farm or in the shops at the business of their choice, the poor will be enabled to defray their expenses, whilst the rich as well as the poor, will receive that physical training, which is necessary to secure a strong and vigorous constitution, and establish habits of industry, and at the same time elevate labor, and prepare the rising generation for discharging the practical duties of life.

When the empire State shall thus have perfected her common school system, and given each individual a thorough and practical

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education, inculcating habits of industry, honesty and sobriety, thus furnishing to each citizen the means of acquiring an honest living, then she will have discharged her duty in this particular, and be preeminently entitled to the state motto "*Excelsior*."

• *Officers for the ensuing year:* President, Charles Halett, Horseheads; Treasurer, Wm. H. Van Duzer, Horseheads; Corresponding Secretary, Col. E. C. Frost, Catharine; Recording Secretary, A. I. Wynkoop, Chemung; with, a vice president and a member of the executive committee in each town.

A. I. WYNKOOP, *Rec. Sec'y.*

CHENANGO.

The annual fair of the Chenango County Agricultural Society, was held in Norwich, on the 12th and 13th of October, 1853. The weather was good, and the attendance was large, and exceeded any previous exhibition in numbers, and the quality of the various productions of the county. The show of horses and cattle never was better in this county, and I think was not equalled or exceeded in the State.

Our farmers are taking more interest in our annual exhibitions from year to year. I think the system this county has adopted in locating the fairs at one place for a term of years, is a good one, and ought to be more universally adopted in the different counties in the State; better accommodations can be had, at less expense, than when it is shifted from place to place every year. At the close of the fair we had an excellent address from the Hon. Alonzo Johnson, of Greene. Everything passed off with interest, and satisfactory to all present.

The financial condition of our society is as follows:

Received from State,	$122	00
from citizens of Norwich,	261	92
memberships,	285	00
gate fees,	300	90
	$969	82

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Paid for premiums, and expenses per vouchers, ...	$903 46
Balance in treasurer's hands,.....	66 36
	$969 82

Our society never was in a more flourishing condition than at present. The farming interest improves rapidly. Farms have risen in price in the last few years, twenty-five per cent. in value. The products of the farmer also commands a high price, all of which stimulates this class of the community. Chenango county is a dairy county, makes butter and cheese. The reputation of Chenango butter is, in quality and quantity, hardly exceeded by any county in the State. She milks her 30,000 cows, makes 3,500,000 lbs of butter, keeps 6,000 head of oxen, 25,000 head of other cattle, 100,000 sheep, raises all her coarse grains, and some to spare; and to sum it all up, is making herself rich by farming.

Officers of the society for the year 1854: Samuel H. Barnes, Norwich, President; Jonathan Wells, Secretary and Treasurer, Norwich; seven vice-presidents; twenty managers, one from each town in the county; with these officers, we will give a good account of our society for the year to come.

Yours, &c., GEO. JULIAND,
President.

CLINTON.

The President of the Clinton County Agricultural Society for and during the agricultural year of 1853, on behalf of said society, would respectfully report, that on account of the inclemency of the weather, the exhibition was, in several departments, inferior to that of some of its former exhibitions. The attendance, both of exhibitors and spectators, was quite limited as to numbers. The annual address before the society, was delivered on the last day of the exhibition, at 12 o'clock, m., by George F. Houghton, Esq., of St. Albans, Vermont, which was an able essay;

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being both highly entertaining and instructive to his hearers. The total number of entries was 204, of which 154 were for premiums, and 50 for exhibition only.

The receipts of the society from all sources during the year, exclusive of loans, amount to $215.65. The disbursemants, exclusive of payment of loans, amount to $76.54.

There has been paid, in accordance with a resolution of the executive committee, passed February 8, 1853, the sum of $139.02. On the 20th day of December, 1853, there was held at the court house, in the village of Plattsburgh, the annual meeting of the society, a notice of which was duly published according to the requisitions of the constitution of said society, at which there was received from the executive committee a report, the substance of which is embraced in the matters above set forth; and that such report was duly received and adopted by the said society, at such annual meeting, as aforesaid. For the last five years, the fairs of the society have been held at Keeseville. The society having an interest in a lease of a certain lot upon which the fairs of the society have been held, and also owning certain personal property thereon, it was voted at said meeting, "that the executive committee are hereby authorised to sell or cause to be sold, all the interest of the society, in and to such property as is hereinbefore described, at public auction, and to report to the society the proceeds of such sale, at the adjourned meeting." The meeting then adjourned to meet on the fourth Tuesday of January, A. D. 1854, at the same place. On the 21st day of January, 1854, the aforementioned property was sold, in accordance with the above vote; and the amount reported to said adjourned meeting, as the avails thereof, was $121.48, which report was received and adopted by the meeting. It was then voted that the said sum of $121.48, should be used for liquidation and settlement of the premiums awarded at the fair of 1853, at the rate of sixty per cent, in full, on the dollar, on the amount of premiums awarded.

At an adjourned annual meeting of the Clinton County Agricultural Society, held at the court house in the village of Plattsburgh, January 24th, 1854, a special report of the executive com-

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mittee, for the year 1853, was submitted, and on motion of Mr. Hubbell, adopted.

The society then proceeded to the election of officers, as follows:

President, John W. Bailey, Plattsburgh; Secretary, John L. Stetson, Plattsburgh; Treasurer, Zephaniah C. Platt, Plattsburgh.

(Signed) RICHARD KEESE, *President.*

JAMES KEESE, *Secretary.*

COLUMBIA.

The annual fair and cattle show of Columbia County Agricultural Society, was held at Chatham Four Corners, on the 30th day of September, and 1st day of October, 1853. The exhibition of all kinds of stock, and entries made for premiums, was very creditable to the farmers of Old Columbia. The neat stock on the ground was numerous, and in quality such as to afford gratifying evidence, that our farmers are beginning to appreciate the importance of improving their breeds. The display of horses was very fine, indeed, and attracted much attention.

There was a fine exhibition of working oxen and cows on the ground, and the show of bulls and other young stock was exceedingly fine, and very gratifying to the society. The show of sheep, I feel warranted to say, was never equalled in the county.

The other departments were much the same as in former years, excepting poultry, which has very much improved. The show of swine was inferior to that of last year.

The plowing match came off on the forenoon of the second day, and the spirited competition for the premiums attracted the attention of a large number of citizens, till the last furrow was turned.

The annual address was delivered by John T. Hogeboom, our county judge, and one of the most improving farmers of Columbia county.

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Treasurer's report of the financial condition of the Columbia County Agricultural Society, December 21, 1853.

Received from members and other sources, ...		$289 25
Cash received from the State, ...		133 00
		$422 25
Paid for preminms, ...	$276 00	
Incidental expenses, ...	36 51	
		312 51
Balance in treasury, ...		$109 74

Officers for 1854.—Elisha W. Bushnell, of Hillsdale, President; F. A. Gifford, of Hudson, Secretary; H. W. McClellan, of Chatham, Treasurer; and five vice presidents, and an executive committee of one from each town.

ELISHA W. BUSHNELL,
President Columbia Co. Agr. Soc.

HILLSDALE, *December* 23, 1853.

CORTLAND.

The fifteenth annual fair and cattle show of Cortland County Agricultural Society, was held at Homer, September 13, 14 and 15. It being the first exhibition under the permanent location, much anxiety was felt by its friends as to the success of the plan, from the fact that many had predicted an entire failure. We are gratified in being able to say, that after the very liberal contributions and untiring labors of many of its most devoted friends, notwithstanding the unpleasant weather, the most sanguine expectations of those interested were more than realized; more people were present and more money paid into the treasury than at any former fair; a larger number of cattle, sheep and swine of superior quality than ever before, on exhibition; and all seemed to feel to congratulate each other on our beautiful location and prospects of success. The building erected, although quite large and peculiarly adapted to the purpose, is found much too small for the accommodation of all the departments of the exhibition.

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The dairy is the great staple product of the county, and this department was full, and the competition was close; it was with much difficulty the judges could make their decision, showing a determination on the part of the dairyman to excel. The skill of those engaged in the mechanical department was brought out in great numbers and in perfection. The plow, the harrow, the wagon, the cart, the harness, yoke, in fact every thing in this line showed decided improvement and peculiar adaptedness to the purpose designed. The vegetable, fruit and floral departments were all represented in great variety and perfection; mammoth in size, luscious in taste, and beautiful to look upon

The ladies' department, last though not least, was well filled with the useful and ornamental; from the fine wrought counterpane and bed quilt to the elegant stitched scarf and collar; from the substantial rag carpet to the fine ingrain, and from the comfortable flanell to the "fine twined linen," showing conclusively, that our farmers' and mechanics' wives and daughters, are not behind in the improvements of the day.

The plowing match came off with great spirit, on the second day; although it rained incessantly during the trial, yet, those who had entered, manifested no disposition to yield, until the last furrow was finished; and we are safe in saying, that never was there a closer contest and never was the work done better.

The address was delivered by John A. Sherman, of Jefferson county, an able, practical, and farmer-like production, well calculated to advance the farmers in scientific and practical knowledge, and induce a taste for rural improvement which is so much needed in our county.

At the close of the address, the reports of the viewing committees were read, and premiums awarded to the amount of $350. First premium on wheat, to H. Rownels, of Truxton, on 268 rods of ground, he harvested fifty-two bushels of Black sea wheat, from three bushels seed. First premium on corn, to H. Thompson, Homer, 98 $\frac{4}{8}$ bushels to the acre; plowed in 20 loads of long manure, and manured it in the hill; planted it on the 16th May; cut it up 1st of September, and husked it in Octobe

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Peas, first premium, to Noah Hitchcock, jr., 41 bushels per acre on corn stubble; sowed 1st May, June peas. Sugar beets, first premium to H. Fairbanks, Homer; 86 bushels on $\frac{1}{8}$ of an acre; ground manured with five loads of compost; ridged 2½ feet apart; planted the 20th May.

Dairy, first premium to Joshua Ballard, 2d; milked 18 cows; the products of which, 3,401 lbs, exclusive of what has been used in the family during the season, and also for winter use, making an average of 188 lbs. 15 oz. to the cow.

Fat hogs, first premium to J. T. Stebbins, Homer; three hogs 18 months 10 days old, weighing 448, 486 and 492 lbs.; fed 35½ bushels ground feed, corn, barley oats, and milk from a small dairy. J. M. Schermerhorn presented a statement of a hog fattened by him; purchased a pig 17th November, 1852, weighing 50 lbs., and slaughtered on the 22d day December, 1853; live weight, 600 lbs.; dressed weight, 528 lbs.; rough lard, 18½ lbs., 546½, having gained in 400 days, 550 lbs., averaging 1 lb. 6 oz. per day; fed on corn, meal and slops from the house.

The financial condition of the society is as follows:

Balance in the treasury for the year 1852,.....			$57 66
Received from 224 members,.....			224 00
Received admission to fair,.....			249 48
Horace White, special premium,.....			25 00
State Treasurer,.....			75 00
			$631 14
Amount paid building committee,...	$450 00		
Less amount charged to year 1852,..	250 00		
		$200 00	
Amount paid for printing,.....		22 25	
Paid in premiums,.....		221 75	
			$444 00
Balance in treasury, ...			$187 14

December 31, 1853.

Officers for 1854.—President, Francis H. Hibbard, Cortlandville; Vice-presidents, Anthony Freer, Cortlandville; Alvah Risley,

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Truxton; Hamel Thompson, Homer; Cyrus H. Harris, Preble; Treasurer, Morgan L. Webb, Cortlandville; Secretary, George I. I. Barber, Homer; Corresponding Secretary, Amos Rice, Cortlandville, post office address, Homer.

I take great pleasure in saying that the past year is the first of permanent location; doubts were entertained by many of the friends of agriculture respecting permanent location; quite a large majority were in its favor, and Homer was designated for five years. The annual show was in September; the weather was quite bad, yet the receipts were about $600, quite equal to the expectations of its most sanguine friends. The annual winter meeting was more largely attended, than any previous year; in addition to the usual meeting, quite a large exhibition of poultry, fruit and grains; a better feeling never prevailed with our farmers. I remain,

Very respectfully yours,

GEO. I. I. BARBER.

DUTCHESS.

The annual fair of the Dutchess County Agricultural Society for 1853, was held at the permanent show grounds of the society at Washington Hollow, on the first Tuesday of October, and the display was more than has been expected, and very fine in all the departments, and more extensive than in any former year.

The experiment of erecting permanent buildings and enclosures for the exhibitions of the society, has succeeded beyond the expectations of the projectors of the scheme, and has resulted in an increased interest manifested in the affairs of the society in all parts of the county, as appears by the unusually large number in attendance at the last exhibition, and the increased premium lists the society is now enabled to offer the public.

The financial transactions of the society for the year, were as follows:

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Receipts.

Balance in treasury from 1852,		$49 00
Memberships,		323 17
From State,		157 00
From show ground,		412 55
		$941 72

Disbursements.

Premiums, in cash,	$421 00	
In books, silver ware, &c ,	69 88	
		$490 88
Expenses for the year,		230 32
Paid on building debt,		193 29
Cash now in treasury,		27 23
		$941 72

Officers for 1854.—Edgar Thorn, of Poughkeepsie, President; George W. Coffin, of Amenia, Treasurer; George W. Paine, of Washington Hollow, Secretary.

ERIE.

The society held its annual fair and cattle show on the enclosed grounds at Cold Spring. The unfavorable state of the weather, for some days prior to the appointed time, being exceedingly rainy, accompanied by high winds, seriously alarmed the executive commitee, and induced them to hold over one day longer.

Had the weather permitted, during the early part of the week, to drive stock, &c., there would have been the largest turnout this county ever beheld; yet, notwithstanding this serious damper, a fair show was made.

The display of horses was numerous and fine, from the heavy draft of 1,358 pounds weight, at five years old, to the 2 min. 30 sec. roadster.

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There was also much fine thorough bred stock, sheep, swine, &c., &c., but perhaps highly conspicuous was the very extended display of poultry, embracing all the various breeds, from the GALLUS GIGANTEUS to the QUEEN PHEASANT, bantam bred, to feather, color and spot. It has been said that no exhibition in this State for number, high blood, and extreme beauty, would at all compare with this collection; $75 per pair was the asking price for some of them.

Floral Hall occupying a spacious tent, was very attractive from the numerous fine fruits, flowers, green house plants, &c., &c., tastefully arranged.

Mechanics' and Dairy Hall were also well filled, and represented fairly the products of the county.

At 2 p. m., Hon. George W. Clinton delivered the annual address, replete with elegant diction, sound precepts, and encouraging assurances. It was well received; a vote of thanks tendered, and a copy requested for publication.

A vote of thanks was also tendered to Warren Granger, the President of the society, for his valuable services.

Officers for 1854.—President, John W. Hamlin, Aurora; Secretary, Nathaniel A. Turner, Aurora; Treasurer, H. Z. Persons, Aurora; and twelve vice-presidents.

Extracts from the address of Hon. George W. Clinton.

If there be a glory peculiar to our country—if its institutions have evolved for us any super-excellent blessing, we may be assured that singular honor, that pre-eminent blessings are solely derivative from the facts that the dignity of our common nature is everywhere conceded, that all honest labor is considered respectable, and that all arbitrary divisions of the people into orders are derided. We have approached, and heaven grant we speedily arrive at the most desirable conclusion, that all men are equal in the view of Omnipotent Goodness—equal in fundamental rights and in the majesty of manhood; that, though there are differences in capacity and attainment, and diversities of occupation, yet

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man is bound to work out, with hand and heart, his own good and the good of his neighbor, and that he who labors in the vale and he who toils upon the mountain, so that they pursue good with similar fidelity and zeal, are brothers of similar desert. We must judge men, not by their costume, nor by their position in society, but by their demeanor in their respective callings. This is christian doctrine—this is the vital spirit of our institutions. Clergyman, priest, mechanic, lawyer, farmer, laborer—these are indifferent additions, and entitle no man to precedence, or place in public estimation. Callings and pursuits are but the fields in which men signalize their qualities, and prove their worth. The patient ox is as respectable as a brutal farmer; a petty thief, or a midnight robber, is not more flagitious than a dishonest lawyer, or a hypocritical profaner of God's altar.

It is true, indeed, that the arts and sciences differ in the directness of their application to the supplying of our bodily necessities and mental cravings; and hence some may be said to be fundamental, and others to be built thereon; but, while they differ in position, they harmonize in the edifice, and it is the edifice, and not its components, that yields us shelter and protection, and elicits our fullest admiration. It is in vain that they, who would magnify their own worth by exalting their own particular pursuit, prate of utility as a true ground of distinction. What honest employment is destitute of use? The farmer feeds the body; but, does it therefore follow that the mechanic and the mariner are drones? The lawyer has shown himself a skilful artificer and a jealous guardian of that freedom under which all thrive; the schoolmaster and the author busy themselves in the culture of intellect, the priest in the cure of souls; and what can be more ennobling than liberty, more glorious than intelligence, more transcendently important than the health of the ever during soul? Are farmers and artificers therefore mere superfluities in the economy of the world? But it is said, we cannot live without agriculture. I doubt it; or rather I think it certain that if the earth were utterly untilled, it would still be tenanted—not as now, by a teeming population, but by a comparatively small number of less happy human beings. We would have, as now,

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within the tropics, fruit eaters; in the temperate zones, hunters and shepherds, and fish eaters; in the extreme north, the Laplander and the Esquimaux would still find their sum of happiness in the reindeer and the seal; there would be everywhere gatherers of fruits and berries, and diggers of roots, the spontaneous productions of the good earth, and the bountiful sea, and the fertilizing rivers in their courses, would still be kind to man, and yield up to him their life sustaining gifts.

But, then, the improvement that agriculture has effected! True, it has beautified the earth exceedingly, and added prodigiously to the value of our existence; but, who armed agriculture for these achievements? Whence does the farmer derive his tools, his comforts, his markets, his all of happiness, his security and ease, beyond mere food and shelter? From the miner, the miller, the mechanic, the fisherman, the sailor, the statesman, the lawyer, the author, the priest. It is the highest boast of agriculture that it has called these classes of employment into being. Whence came the main improvements of agriculture? From the meteorologist, the navigator, the mechanic, the geologist, the zoologist, the botanist, the chemist. What would be the condition of the farmer, were there not a great number of equally laudable employments for men to exercise their arms and minds in? If land were the only, or the chief source of sustenance, who could occupy it in peace? No, my friends! when we talk of the great benefits man has reaped exclusively from any one of our pursuits, we talk idly. No great good ever sprung from any single cause, save that cause were God. Even as our individual faculties and powers conjoin to make the perfect man, so the co-adaptation of our different pursuits, binds us all together in our mutually dependent, happy state. A nation of farmers, if possible, would be a horde of barbarians; a purely mechanical people would be a miserable, dependent band of slaves. The true strength of a country, the surest guaranty of its happiness and independence, reside in free republican institutions and an unrestrained diversity of private occupations.

But, while we claim no individual honor from our vocations, and attribute no superior, instrinsic excellence to any employment,

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we find an honest pleasure in tracing to the pursuit we are engaged in, the melioration of the condition of our race, and the rise of nations in power and wealth. We find, too, in the anticipation of greater good to be derived from it, a noble incentive to exertion for its improvement, and a just ambition to promote it, and so to act well our part in life—remembering always, that others, of other callings, must be co-workers, and that success is glorious because of universal benefit.

In these particulars, you, in common with all votaries of agriculture, and with all men, have cause to honor agriculture, and be grateful to those who have improved its implements and processes, and raised it to the rank of a profound and complex science. You have also great reason for thankfulness, that Providence has placed you in so desirable a pursuit, where labor is surely and sufficiently rewarded: which is so conducive to health and peace; so favorable to mental and moral culture, and where very much, we are confident, remains to be achieved for the prosperity of our great country, and of the whole family of man.

Vattel calls agriculture "the nursing mother of the State." The great and good Duke of Sully says, that "agriculture and pasture are the two great breasts of nature, from which nations receive their nourishment." Such are the figurative eulogies of the most profound philosophy, the wisest statesmanship.

Agriculture is, in some sense, entitled to pre-eminence above manufactures and commerce, science and literature. It ushers them into existence, and maintains them. It is entitled to precedence, even as the parent is entitled to assume the place of honor among his children. It deserves and receives the reverence and aid of its grateful children.

Were it not for agriculture, one's life would generally be fully occupied in procuring sustenance, and war and rapine would constantly deform the world. Man would be a solitary animal, or would unite rather for plunder than security. At best, peace would be insecure; the arts of peace would be rude and few, and science would but faintly glimmer o'er the mind. But the earth

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pours abundance into the hands of agriculture. The excess of production beyond the wants of those who till the soil, flows abroad, and maintains in plenty the immense number who occupy other departments of industry, and gives scope for charity, and leisure for the prosecution of the arts and elevation of the sciences! And in the great circle of existence, the arts and sciences return reverently to agriculture, and sustain, and guide, and renovate her. All conjoin in producing happiness, and calm contentment paves the way to heaven. Religion flourishes where men are nobly happy.

It is said that "it is not the number of people, but wealth which constitutes their power." This is true, if it mean that the comparative power of nations of the same population is determined by the sufficiency and diffusion of wealth among their people—understanding always by wealth, the primary elements of comfort and contentment, food and shelter, and their ordinary consequences, intelligence and love of liberty. But the comparative number of their people who are wealthy in this sense, and who are attached to the land in which, and the institutions under which they live happily, must form the surest criterion of their power for noble ends—the preservation of internal liberty, the defence of their country, and the increase of its energies. Furnishing, as it does, the main supply of food, the chief materials for manufactures, and the aliment of commerce, agriculture is the great primary source of all prosperity; but it seems to me plain, "that population ought to be subordinate to agriculture, so that the abundance of produce should constantly precede the increase of population,"* and that "all the numerous arts and manufactures of the modern world, by which such numbers appear to be supported, have no tendency whatever to increase population, except so far as they tend to increase the quantity and facilitate the distribution of the products of agriculture."†

Your occupations, gentlemen, are calm and ennobling, such as wise and good men have, in all ages, coveted. They have a charm for young and old, present a happy alternation of necessary labor

* Arthur Young. † Malthus.

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and delightful ease, and favor growth in mental stature and moral strength. We cannot concur with Mr. Blair, that mental and corporeal vigor is not long hereditary in cities; for there, too, enjoyment is accessible: but the farm, or at least, the garden, is, in the eyes of most men, the pleasant, wished for, termination of their toils. There is something in dealing with mother earth, and witnessing her miracles, which has a charm for all right-minded mortals. We suffer in camps, seek fortune on the seas, and work in cities, in the hope of at last reposing in the country, and resting there in our long sleep. How many of our greatest men have signalized their innate love of nature by such a course! Your memory will recall a long list, headed by Washington, the well-beloved; and for the humbler myriads, whom hard fate confines for life to city occupations, how gladly do they seize every opportunity to penetrate into the fields! How carefully they devote to the culture of some green thing, having the sweet savor of dear mother earth, each spot of ground they can control, though it be but a few inches square! And when that is impossible, they cherish with a love resembling the paternal, some precious flower, or aromatic herb, in the kitchen, or the parlor, on the window or the house-top. Truly, love of the country is engrafted on the human soul.

Your occupation is noble, and, with a proper appreciation of your lot, you are most favored by Providence. It brings, however, with every blessing a duty; and every duty performed is but a better blessing. Your felicity is attributable, first, to the Author of all Good, and, under Him, to the institutions of our common country. I have endeavored, briefly and hurriedly, to show you that our free institutions are the main cause of your honorable estimation. They are, to a certain extent, in your hands, as one of the most numerous, intelligent and influential classes of our citizens; and surely you will endeavor to honor them by your deportment, and to preserve their purity unsullied by faction, and their integrity complete amid the storms of faction.

To the noble employment by which you prosper, and to your country, you owe another duty—the elevation of agriculture both as an art and as a science. Art and science are working most

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marvellous changes in the practice of the farmer; and their followers in this field have won, and are yet to win, a fame far purer than the warrior ever won, save when he fought for liberty. The plow has been transformed, in our own age, from a clumsy implement, to one which seemed all but perfect; and now, if I read aright, the rotary digger promises to supersede the plow. It seems almost incredible that this venerable instrument should fall into disuse; that its name should live only in the history of your noble science, and as embalmed in poetry.

Most effectually has a distinguished member of your society invoked architecture to your aid, and taught us how to add, through it, to the comfort and efficiency of rural life. But a wide field of exploration still lies before you. I speak with the greatest diffidence, but it seems to me that the pathology of plants is still in infancy. Disease, whether caused by insects or inherent, seems to recur in cycles. It may be that vegetables, like man, are subject to plagues—plagues which make them droop towards extinction, but never utterly destroy them. Even the hardy forest trees are not exempt from these dire visitations; but the sycamore and the locust (apt examples), are recovering their vigor, and will probably flourish unrestrainedly for a long term of years. Esculent roots, and grain, and fruits, seem peculiarly subject to such maladies, and, when such a pestilence has once gained a foothold, it seems, like the cholera, to traverse the earth in a broad great circle. The tumultuous ocean cannot bar its passage; and if we would be safe, preventives must precede its presence, and neutralize the invisible influences which constitute its strength. The grape disease, if it be not here already, will soon lay our vineyards waste. What a field is open here for the attainment of true glory. Surely, the man who shall restore the vine to pristine health, will gladden the hearts of nations; and he who shall banish the disease that has so long ravaged the potato fields, will win the gratitude of half the world.

The skies have been most unpropitious, but your energy has conquered; and I thank you, and your compeers in the service of mankind, for this most gratifying exhibition—our horticulturists who have contributed so lavishly to the pleasures of this occa-

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sion with their fruits and flowers, and have added, as it were, the charm of poetry and music to the enjoyment of rugged action,—and our mechanics, whose skill is the pride of Buffalo, and whose progress must eventually constitute the chief aliment and support of the prosperity and greatness we anticipate for her.

But I must not detain you longer. I thank you for the patience with which you have listened to my crudities. I thank you again for the evidences you have furnished of the high agricultural position of Erie county, and I wish you all honor and happiness in your most laudable pursuits. May every season add to your peaceful triumphs, and exalt the agriculture of our country in all its branches.

ESSEX.

From Wednesday night till 12 M. on Thursday of the week of the fair, it rained in torrents; and everything portended the fair must be a complete failure. The officers of the society in the afternoon of Thursday consulted upon the expediency of a postponement, but finally concluded to 'go ahead,' and a few entries were made. A pleasant morning on Friday changed the face of things, and by 2 P. M. the grounds were fast filling up, and the secretary and his assistants had their hands full making entries and delivering certificates of membership &c. It became apparent that the arrangement of the articles, and the decision upon them, could not be got through with that day. Many who had conjectured there would be an adjournment, pressed the officers to give them until the ensuing morning to produce articles for premiums or exhibition. Under all the circumstances it was resolved to do so, and also to defer the address until 11 A. M. of Saturday, and handbills were issued by the president to that effect. The result affirmed the judgment of the officers of the society. A great number of additional entries were made; and by 10 A. M. on Saturday the grounds were thronged. Such was the number and variety of the articles, that it was by the utmost diligence that the several committees of judges could complete their report in season.

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Between 11 and 12 o'clock, the Hon. G. A. Simmons commenced his address, which commanded the large audience for nearly two hours. It was a practical, well considered,—a profound essay upon the condition and capabilities of the county of Essex, and the true manner of improving our advantages. Whatever their wishes before, few that heard him we believe, retain any desire to emigrate. The combination of advantages we enjoy here, were well and truthfully stated. The society unanimously, and with cheers for the orator, voted thanks, and requested a copy for publication; and we hope soon to have the pleasure of presenting the address to our readers.

Immediately after Mr. Simmons had concluded, the reports were read and the premiums awarded; after which the Hon. W. C. Watson, the president, followed with a short congratulatory address, when the concourse dispersed with great good feeling.

We must not omit to state that on Friday evening, a meeting was held at the court house, which was well attended, and there was an animated conversation or discussion upon agricultural subjects generally until about 10 o'ctock. These meetings are becoming a very interesting portion of the transactions at our annual fair.

The report of the award of premiums will give a pretty good history of the best of the productions exhibited. Where there were so many superior articles, it is difficult to discriminate, but we cannot forbear to notice some things we saw.

And first and foremost, the show of horses was magnificent. When the first fair was held here, two years ago, every one was astonished at the display in this department. But it seems as if here our excellence increased every year, and the younger horses show better than the older. Among so many good ones it would be almost invidious to make comparisons; and we are told that the judges had great difficulty in fixing upon a preference. A black four year old, property of Root & Patterson, of Westport, a large bay of S. T. Burwell, of Crownpoint; and a sucking colt of McCaughin, of Ticonderoga, attracted attention.

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The exhibition of cattle was not so good as we have seen here; but there were some fine exceptions, among which was a two year old Durham bull owned by T. Taft Esq., of Crownpoint; one of the best we ever saw of that age. The Hodskins bull too, Devon, is a noble animal.

The sheep were good and maintained their former reputation; among which were some from the flocks of S. S. Prentice, S. W. Smith, B. F. Holcomb, B. M. Hodkins, and S. Root.

Some of the hogs were very fine. A boar, sow and pigs, owned by A. H. Post, and two barrows by N. Miller, and R. Baird, were good.

There was not quite so much needle work as usual; but some very fine specimens. We noticed a white quilt or counterpane by Mrs. Sarah B. Everest, of Moriah, of very unique texture, a beautiful thing—composed we think of nearly three hundred knitted shells crotcheted together; a chair with worsted covered back and cushion, by Miss M. E. Churchill; a cake basket doily by Miss Emily Evans, of Philadelphia, a piece of elegant crocheting.

Of potatoes, squashes, peppers, apples, grapes, plums, tomatoes, corn, beets, flowers, and other members of the vegetable kingdom, a fair show was made. Among these were squashes, (some of them from the land of Mr. Root of Schroon, and of Mr. Finney of Elizabethtown,) about six feet in circumference and weighing from sixty to eighty pounds. Also ears of corn, 13 or 14 inches in length, 8 and 12 rowed, hard, well filled and excellent; and corn stalks over 15 feet high; select parcels of garden seeds from the gardens of M. Hall, Esq., of Jay, and Col. Williams of Elizabethtown; and peppers, one of which would fill the saddle bags of the most popular pepper doctor. The exhibition of dairy products was small but excellent in quality.

The bouquets displayed were tastefully arranged; and some large and beautiful dahlias from the garden of Mr. Battey were very conspicuous, comprising about 60 varieties.

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A member of a temperance society from Elizabethtown had on exhibition a fine bottle of currant wine; and the Iron Mountain Company a lump of rich ore, weighing about half a ton.

We saw an iron pot and pewter soup-dish, the property of Franklin Barrows, Esq., of Lewis, which came over in the May Flower; both were very deep, showing that the Puritans were fond of good living.

One of the finest sights of the occasion was the collection of paintings by Miss Annette Bishop. She has crowned every preceding fair with the exquisite beauties of her art; but none more than this. Her miniatures upon ivory are so perfectly life like and beautiful, that both the connoisseur and the novice are struck with admiration. Miniature painting is evidently her forte; and if she devotes her time and talents to that branch, she must soon be, if she is not already, the best miniature painter in the State. She had a few crayons and oil paintings that were very respectable, and her brother and sister also had some very good peices; and there was a very creditable performance, a head in crayon, by Miss Blinn, of Essex. There were two crayolithics by Miss H. Cutting, one of which, an Italian sunset, was, in our opinion, beautiful in its effect, especially as seen in certain lights.

We observed Gen. Churchill, of the U. S. A., upon the ground both days. We believe he acted as one of the judges upon horses, a duty for which no doubt he is well qualified—he had a very fine one shot under him at Buena Vista. It was gratifying to see this veteran of two wars take such interest in agricultural pursuits. It is well known that to his skill in disciplining the troops, we are very much indebted for the great victory of modern days.

Officers for the year 1854: President, Winslow C. Watson, Port Kent; Secretary, G. S. Nicholson, Elizabethtown; Treasurer, L. D. Brown, Elizabethtown; and 19 vice-presidents.

The treasurer reports the receipts for 1853, $400, from State $71.

Upon the whole, the fair was creditable, gratifying, and encouraging to the friends of agriculture in this county. Notwith-

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standing the inclemency of the first day, the exhibition was in all respects good; and every year shows an advance in agriculture and the sister arts. No man can doubt for a moment, that they ontribute vastly to the wealth and importance of the county.

G. S. NICHOLSON, *Secretary.*

FRANKLIN.

This is the second year of the society's existence. Their annual fair was held at Malone, on the 5th and 6th of October, 1853. The weather was bad, but the attendance and exhibition exceeded our expectation. The annual address was delivered by the Hon. J. H. Titus and was one of the best ever delivered in this county.

The treasurer reports as follows:

Amount received at fair in 1853,		$821 88
Premiums awarded and paid,	$383 00	
Paid for structures on the grounds,	209 40	
Printing bills,	83 50	
Miscellaneous expenses,	79 82	
		755 72
		$66 16
Surplus of cash in 1852, invested,		297 50
Balance in treasury November 30, 1853,		$363 66
Due from the State,		50 00
		$413 66

About $50, outstanding claims.

So far as our financial matters are concerned, the society stands well and promises great usefulness to the people of the county.

SIDNEY LAWRENCE, *President.*

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FULTON AND HAMILTON.

The fair and cattle show of the Fulton and Hamilton County Agricultural Society, was held at Johnstown, on the 13th day of October, 1853, and was attended by a large concourse of people, influenced by an increased anxiety to exhibit and view the continual improvement in stock of the various kinds, and in agriculture and manufactures.

The increase of population and the accumulation of wealth among the agriculturists and manufacturers, very naturally incites the application of genius and invention to their pursuits. The show of cattle and horses, and all of the animal genus, was full as large and better in quality than at any exhibition heretofore; while the mechanical branches, in labor and time saving machines, as applicable to agricultural pursuits, far excelled all former exhibitions.

The whole exhibition was very gratifying to all who are in favor of improvement in science and art, as applied to husbandry. Improvement should at least keep pace with the increase o population. This can with truth be said of the county of Fulton; among the smaller counties as regards inhabitants.

The funds of the society, including the balance on hand of last year, with voluntary subscriptions, amounted to	$161 91
The society paid premiums in cash to the amount of	$93 75
Incidental expenses,.....	
Cash on hand, ...	
	$161 91

The society has also awarded 43 volumes of the Transactions of the State Society and of the American Institute, for premiums.

The county of Fulton is well adapted to raising stock and grazing; although oats, corn, rye, potatoes and buckwheat, are raised in considerable quantities.

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In the northern part of the county, the lumber business and the manufacture of leather, engages the attention of almost the entire population, equaling, in quantity, any county in the State of the same number of inhabitants; and in the manufacture of buckskin mittens and gloves, probably exceeds any other county, unless it be New-York, (which we except with a good deal of hesitation.)

The farmers and manufacturers have a ready communication with market at Fonda, on the New-York Central railroad, only four miles from Johnstown, the shire town of this county. There is also a railroad in contemplation (surveyed) from Oswego to Troy, which will pass through Johnstown, which, when built, will afford still more convenient access to market, which the lumbermen and manufacturers of this, and Hamilton counties, much need.

Officers of the society for 1854.—William Slocum, of Northhampton, President; E. W. Prindle, of Johnstown, Vice-president; William J. Robb, of Perth, Secretary; Arch. Anderson, of Johnstown, Treasurer; Daniel Cameron, Secretary.

HERKIMER.

The annual fair was held at Ilion, Sept. 28, 1853, and was a most interesting and encouraging exhibition. The annexed comprises a summary of the proceedings.

PRESIDENT'S REMARKS.

The citizens of Ilion, especially the business men of the place, were on hand with a liberal subscription, promptly paid, to defray the necessary expenses of fitting up the grounds suitable for holding the fair, &c. Mr. John Ingersoll laid the society under many obligations to him, for the use of suitable and convenient grounds. Mr. A. Underwood is likewise entitled to many thanks for allowing his lumber to be used for fencing, &c. About six acres of

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ground were enclosed, and ample preparations were made for a large gathering, usual on such occasions.

A severe rain storm caused much inconvenience to those who were in attendance, and many to stay at home, *especially ladies*—without whom, and their choice products on hand, our annual fair is robbed of its most interesting *features*.

Notwithstanding the inclemency of the weather, the show of animals, and mechanical and farm implements, was large; indicating a strong interest felt in the objects of the society. An increased interest was given to the occasion by the attendance of distinguished gentlemen from other counties. Such an interchange of civilities is worthy of encouragement, and might be a means of much improvement.

An able address was delivered by the Rev. Dolphus Skinner, of Utica.

It is to be regretted that the several committees have not furnished a specification of all the animals and articles presented, together with reasons for the awards, that those who were not awarded premiums may read and understand the objects for which awards were made. The premiums awarded are but a small part of the objects of the society. The information elicited and disseminated is the grand purpose of the organization—which should be perfected through the medium of detailed reports from competitors and the several committees. It therefore cannot be too strongly urged upon competitors and viewing committees, that on the fullness of their reports will depend the usefulness of the society.

The earth is acknowledged to be the common mother of all; and the fruits gathered from her bosom, are alike the indispensable nutriment and support of all. And a hope, or prospect, of acquiring a portion, is the active stimulus which urges all forward in the various spheres of action—awakening ingenuity, and bringing out invention.

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It has been wisely said that agricultural production is the first in order, the strongest in necessity, and highest in usefulness, of all the schemes of acquisition. The other branches stand upon it, and are sustained by it, and cannot exist without it. All, then, are interested, as observers, or participators, in agricultural pursuits. Hence the necessity of every individual in community contributing to develope new principles, to facilitate labor, and increase the products of the soil.

It is well, therefore, for communities to congregate together, at least once in each year, and compare products and opinions, and make known the condition of their several districts, and the improvements that have been made in different branches of business, when, and where, all the seed, stock, or implements, that any individual, in the various spheres of active life, may seek to raise, or employ, may be exhibited to public inspection, and all can compare the result of their own labor with that of others, alternately improving, and improved, by observation and comparison.

How, I ask, can the collective influence of the community be better directed, or more efficiently used, to improve our farming habits, than through the medium of a well conducted society? And to be such, I would suggest (as one important feature), that no premium should be awarded for an animal, or field crop, unless the competitor gives a full detail of his practice, and it is worthy of adoption. So long as the funds of the society are paid out annually in awards, without enforcing its by-laws, so long we shall be without such improvement as the society is designed to promote. If a mechanic exhibits a farm implement, or improved machinery, he is required to explain and prove its practical utility to the public, by actual demonstration, to entitle him to an award. The same rule should apply to the farmer, to reciprocate. How many of us are prepared for investigating our practice scientifically? How many farmers in the county have applied plaster to a portion of the same field, in meadow, or pasture, annually, for a term of years, and not on the remainder, and noted the result; or saved the liquid manure of an animal, and applied it to a given area of land, in grass, or grain, and the solid excrement of the

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same, and applied it to the same area adjoining the other; or applied a given quantity of manure on land, in meadow, in spring, and the same on land adjoining, after haying, for a term of years, and marked the result, or divided a lot equally, and grazed one half, and mowed the other, and applied all the manure made from hay to the mowed part, and then tested them both at once, for meadow, or tilled crop, to test the comparative strength of both; or plowed a portion of a field shallow, and the other part deep (and how deep), and what was the result in the tilled crops, and their capacity for meadow or grazing, after; and how many are qualified, by experience, to appreciate the comparative value of the different breeds of animals for fattening, for labor, or for milk, for cheese, or for butter? Who, that exhibits an animal superior in appearance to his neighbor, can satisfy the public that the animal is the product of scientific breeding and feeding, and an example worthy of following; or that can explain the fitness, or adaptation of animals, to their different localities and purposes; or who, that does not carry his measure from the same crib to feed each animal, although the nourishment to some is desired to produce nerve, or strength to labor upon the farm, others upon the road, and some for fat, butter, cheese, or growth in young animals, &c., without knowing or calculating the comparative value of the different grains for producing the object desired? Who that has seeded for meadow, or pasture, with a mixture of different grasses, and what was the kind and proportion of each, and how varied in the several proportions, and best adapted to the different soils and localities in this county? Who has weighed, or measured the feed, given to different breeds of swine at the same time, and with the same hand, and kept a diary sufficiently correct to satisfy himself and his neighbors of the comparative cost and value of the animals at different periods in their growth? As our lands must have rest and feed, like our hard worked animals, can we make them grow their own feed? And how? If they are naturally weak, or been reduced by working without feeding, what artificial manure can we best use to grow the first feeding? Can we feed twice in one season, by plowing under two green crops, and what are the best crops to raise for that purpose? How many green crops plowed under, alternately, will bring an ordinary soil

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to a state of productiveness that will pay the interest of one hundred dollars annually per acre, and what the cost? And can the same land be kept up by putting back in some form the manure made from what is taken off annually, by cropping? These are a few of the many important questions involved in the business of the farmer, from whom answers are looked for, by an interested community, in the transactions of our society, published annually.

When the observer looks abroad, over the fertile hills, productive valleys, and busy manufacturing villages of our noble county, occupying, as she now does, a well earned and proud position in the Empire State, in respect to industry and general intelligence of its inhabitants, and the progress in almost every branch of arts and science, the conviction is irresistable, "that Herkimer county is second to no other in the State, in the natural elements that makes life pleasing and desirable."

The variety of surface and soil, producing every thing abundant within the whole range of agriculture, that our latitude will permit, and checkered with streams of pure water, running from north and south (affording frequent opportunities for healthful and profitable improvement of water power), and coursing to the rich valley of the Mohawk, which is plowed by the great arteries of trade and commerce, strongly invite those with capital and enterprise from other less favored localities, *to seek a home within the social community of our thriving villages, or among the green hills of the rural districts.* And it is a matter that the *farmer*, as well as the mechanic, artisan, or professional man, may well be proud of, that Herkimer occupies the position she does.

Go where you will, as far as the Herkimer dairy product is known, and it is the first inquired for in market, and in many kinds of grain and fruit, and variety of product she is unrivaled. So, too, with the product of mechanical labor, in its variety and perfection, it is also unrivaled, as our annual exhibitions prove; an account of which heralds the birth of some new enterprise or invention, each surpassing its predecessor, and threatening to be

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the most prominent among the causes of prosperity, and first to spead the beauty and bloom of paradise over earth's unconquered surface.

In view of the progress of improvement in the mechanical art, and other sciences, are we, as farmers, keeping up, in the science of agriculture, with the progress of the age in other departments?

Whilst our innumerable water privileges are being improved, and their utmost capacity developed, studding the valleys with thriving villages, and increasing population, with a growing demand for the products of surrounding fields, are we prepared to reciprocate for our improved home market, and the two thousand patent implements, to lessen and facilitate agricultural labor, in preparing the soil in our charge for its maximum fertility? Or shall our home demand be supplied from some other district, by reason of our farms being lined with broad hedges, and our fertile fields choked with foul weeds, to be entailed an everlasting curse to a rising generation?

Farmers—we have something to do to sustain the character (untarnished) so justly ascribed to our occupation, as being the foundation stone of individual and national prosperity. Improvement in agriculture is an object of earnest solicitude by all classes, and many learned and eminent men are nobly engaged in the work; and now is the time for every farmer to help himself, by adding his mite to the general stock of information gathered from the result of individual practice, through the medium of agricultural societies, and it behooves us (if we wish to continue and increase the efforts now making to bring our occupation into just repute), to see that our part in the matter is well attended to.

If we are to be taught, by those who have learning and leisure, to digest practical theory, and determine the true relation of cause to effect, adapted to our sphere, we must furnish them a detail of our practice, marking well the result, from which they will be enabled to separate the good and bad results, and return to us the true cause of good and ill success.

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Let us, then, be awake to the subject in Herkimer county, and all come forward at our county fair, as one family, enlisted in one common cause, prepared to make public some new feature, or result of our practice (whether good or bad), and publish all in the transactions of the society, and make them auxiliary to higher departments, where all such matter may be analyzed, and such portions drawn out as are worthy of adoption, and returned, with the true cause of success, or failure, pointed out to us.

A. L. FISH.

STATEMENT OF WILLIAM STUART'S FARM, WINFIELD.

To the Committee on entire farms :

Gentlemen:—The farm which I occupy lies in the town of Winfield, one mile north of the Cherry Valley turnpike, and has been in my possession twenty-two years. To the questions propounded I would respectfully return the following answers:

The farm consists of three acres in the highway and building yards, twenty-two acres in the timber, and seventy-five acres of improved land. The soil is mostly sandy gravel, with some slate ridges; and also some ravines of muck, with a clay sub soil. I have not, to much extent, used any manure; more has been made on the farm (with the exception of plaster). Stable manure is used on the slate; stable manure and plaster are both applied to the gravel soil. The stable manure is loaded on the carriage in the stable as it accumulates, and taken to the field designed for corn, where it is deposited in about one hundred heaps, of ten bushels each to the acre. It is spread broad-cast on the sward, and turned under about four inches deep at planting time. I prefer deep plowing subsequently, before the land is seeded down. By mixing the sub-soil with the surface mould we get a deeper soil for the roots of plants, render under-draining less necessary, and make our land better able to withstand a severe drought; while in many instances we improve its quality, by furnishing it with new ingredients. I have never used a sub-soil plow; have practised trench plowing to the depth of fourteen inches, with decided good results. A *double Michigan* plow, with a double team, or two single teams in the same furrow will do the work.

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As my business is dairying, I have but little land under the plow, and consequently make but little manure from straw. I have a basin of earth at the stock barn, which will hold about forty loads of muck, sods, or other such like material, that by taking the wash of the yard through the winter, increases the quantity of manure. I usually apply about one hundred and fifty loads of manure, of thirty bushels each, annually. The ashes made on the farm are applied to the corn, when first up, and about half a gill of plaster to each hill is applied subsequent to the first hoeing. The timber which was cleared from the land was beech, hard maple, elm, basswood, white ash, and ironwood. The plants natural to, and those that have great affinity for it, are garget, wild-turnip, ginseng, cat-mint, crow-foot, strawberry, fire-weed, chickadee, plantain, tick-weed, burdock, narrow-leaf, and yellow-dock; the last four of which, together with all bushes and briers, I believe have about disappeared, in consequence of their roots having been thrown out of the ground, from some cause. Eight acres have been cleared of timber, and the whole cultivated land cleared of stone, to the depth of plowing, within twenty years.

There are a few narrow swales, through one of which I have cut an open ditch, eight feet wide, and twenty rods long, and others that are underdrained; one with cobble stone, and the balance with tile. The tile, I think, *work much the best.* As our land grows older in cultivation, it appears to be more retentive of moisture, therefore underdraining becomes more necessary, and subsoiling more beneficial. I think if my land had *a good tile drain every twenty feet*, it would be ready for cultivation earlier, and also more productive, and yet I have not much that is commonly termed wet land.

I have eight acres, the present season, under the plow; one acre of potatoes, of the hemlock and pinkeye varieties, planted the 18th of April on inverted sward, without manure, hoed twice, without hilling; they are not all harvested; tubers are good sized; very few small ones among the hemlocks; about four tubers in a bushel affected by the rot, which I am satisfied is epidemic; can prescribe no remedy; have tried many experiments without suc-

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cess. The yield of the present crop is about one hundred and fifty bushels. One acre of oats and peas, mixed, thrashed. Two acres of oats not thrashed. One acre of Indian corn, for green fodder; drilled in north and south, three feet and four inches apart, at about thirty grains to the foot. By drilling in this manner, the roots are more affected by solar heat, and consequently more ears form; we can keep the ground cleaner with the cultivator, and the crop is more conveniently harvested than when sown broadcast. Also, three acres of Indian corn, planted three feet and four inches apart, each way, on the 16th and 17th of May, on manured sward ground, and hoed twice without hilling, and cut up by the ground in September; not yet husked. I sow ten quarts of timothy seed to the acre, for meadow, adding one quart of red clover, for pasture; white clover appears to be natural to the soil. The grass seed is sown with the grain, in the spring. I mowed this season, twenty-five acres, yielding about one and a fourth tons per acre. The old meadows have suffered very much from drought. I prefer to cut timothy when in blossom, and after wilting, let it stand in cocks over night; and if the weather will permit, spread out, and house the next day. Clover I let remain in the cock, until it is made sufficient for the mow. All the hay is housed sufficiently damp to dissolve as much salt as the animals will need, while consuming it, and a little sprinkled on each thin layer, about three quarts per ton. I sow one hundred pounds of plaster per acre, once a year, on both pasture and meadow; usually after haying. I have never discovered that the small seed grains were benefited by plaster. I have, this season, six acres of pasture that I have hired, in addition to the forty-two acres on the farm, which, in consequence of the excessive drought, and the multitude of grasshoppers, has not been very productive, and therefore the products of the dairy are less than usual.

I am keeping, this season, two horses, one yoke of oxen, and twelve cows, of native blood, and nine cows, seven yearlings, and six calves that are grade animals, of Devonshire, Holderness, and Durham blood, from one-fourth to three-fourths, Durham—no

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full bloods. I think the Holderness decidedly the best milkers of the four breeds that I have tried. I have two native pigs, for pork, and one full blood Suffolk in store. No sheep are kept. I have practised, for about twenty years, the plan of slaughtering pigs at from eight to nine months old, and think the pork the most palatable, and cheapest made. They usually weigh from two hundred and fifty to three hundred pounds. Have had full blooded Berkshires weigh three hundred and twenty at that age. Fatting pigs are fed wholly on dairy slops, and meal from hard grain.

All cattle are kept in stable, nights and stormy weather in winter, and fed on hay alone, with the exception of calves, the first winter, and cows that are in milk, they are fed apples, meal or roots. I have, the present season, milked twenty cows, including one that is farrow, and two that are three years old, and have fed them fifty bushels of corn, and one hundred and twenty bushels of shorts, with dairy slop. They have furnished a family of eight persons, with milk, butter, &c., and previous to the first of May, we made for market, two hundred pounds of butter. (204 pounds.)

		lbs.
In the month of May, made cheese,	.....	1,800
" " June, "	.....	2,016
" " July, "	.....	1,508
" " August, "	.....	1,386
As weighed in market, making,	.....	6,710

pounds of cheese in the four months, three of the cows not cominginto the dairy until the middle of May. Since we commenced feeding green fodder, the cows have measurably recovered from the effects of the drought. We are, at the present time, making fifty pounds per day, as it comes from the press.

The fruit orchard has one hundred and sixty-three apple trees, one hundred and fifty-two of which are grafted, and have full tops. The different varieties are Sweet Bough, Pound Sweet, Red and Green Streak, Orange Apple, Sweet Russet, Middle Apple, Talman Sweeting, Sweet Pearmain, Herefordshire Pearmain, Jer-

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sey Sweet, Lowell Fall Pippin, Newtown Pippin, June eating, Fall June eating, Vandevere, Printis Russet, Roxbury Russet, Baldwin, Green Seek-no-further, Westfield Seek-no-further, Manks Codlin, Esopus Spitzenbergh, Ox Eye, Haskell's Sweet Rambo, Golden Sweet, Swaar, Alexander, Northern Spy, Rhode Island Greening, Black Gilliflower, Cheesebro' Russet, Williams Favorite, Early Harvest, Madison, Fallawater, and some others not yet in bearing. The pears are Bartlett, White Doyenne, Seckel and Chaumontelle. The cherries are the Hearts, Transparent Guigne, Black Eagle and May bigrareau. Plums are Green Gage and Magnumbonum. Quinces, are Orange. The grapes, are Preserve, Isabella and Catawba. The treatment which the trees have received, has been, firstly, to give the roots ample room, in a well pulverised soil, made rich with stable manure; secondly, to cultivate the ground to some hoed crop, which needs manure, until the trees come into bearing; thirdly, to allow no worms to live upon them; fourthly, to wash the trunks and large limbs in the spring, with soft soap, applied with a white wash brush, which destroys the eggs of insects, as well as otherwise benefits the trees; fifthly, to raise a mound of earth about a foot high at the root, (commonly of muck from a swamp) in autumn, to prevent mice from eating the bark in winter; taking especial care to spread it away in the spring, so that the roots shall be free to the solar light and heat, for at least a foot from the trunk of the tree; sixthly, to prune in winter, by taking off every branch that I deem to be in the wrong place; and in summer, by rubbing off all buds where I do not wish a branch to form; and seventhly, to give the trees protection, by fencing against those animals that would be likely to take off the branches, which I would be glad to have remain. Lime, ashes, muck, old tan and rotten wood have been spread under young growing trees to good advantage. Ashes have decidedly improved the quality of the Newtown Pippin. The Hasket Sweet I think the best autumn sweet apple, retaining its flavor, and keeping well full three months.

In reply to your interrogations with regard to farm buildings, some apology may be due from me for having deviated somewhat from the beaten track of the multitude, in this respect. The

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only building on the farm, when I purchased it, was a barn, and it is still a standing monument of the enterprise of the pioneer settlers; and, as a matter of course, you will understand that it is thirty by forty feet, with fourteen feet posts, and done off in the old stereotype plan, exactly like those built by the Pilgrim Fathers, who landed at Plymouth Considering that buildings, as well as other things, should be fashioned in that manner which will best serve the purpose for which they were intended, and my purpose being to keep neat stock, are my only apology for the innovation. The barn is thirty by forty-eight feet, with twenty feet posts; a framed building, set on a basement of stone, laid in lime mortar seven feet high, for stabling. The building stands on the side of a ridge, descending to the south-east. The stables have twenty-seven sets of stantials for cattle, and stalls for six horses, in four rows, thirty feet long. A space for feeding, two feet wide on each side of the thrashing floor, extends from the mangers up to the top of the mows, with studs two feet apart, on the sides next the mows, so that fodder may be put into the mangers without first throwing it upon the floor. The thrashing floor is ten feet below the plates, and the beams are two feet below the plates, so that hay may be drawn up near to the top of the mow, by the team, and easily thrown over the beams, they being only eight feet above the floor. Under the thrashing floor is a granary, sixteen by thirty feet, and ten feet high, which may be filled with fodder, when necessary. The barn was built in 1846, and cost $600. Although I, at first, was not sure that the plan would work well, and others spoke discouragingly, and even at the raising, but few really understood the fashion, or thought that they should like it; and one considerable landholder said, that if a man should build such a thing on his farm, he would prosecute him. Yet, after having had seven years experience, it fully answers my expectations, and those that have assisted me on the farm are, I believe, unanimously of the opinion, that less labor is requisite to get hay into the barn, and much less, as well as a saving of fodder being made in feeding it out, in consequence of its odd construction.

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The dwelling house is thirty by thirty-three feet, one and a half stories high; built of stone, with a dining room, parlor, pantry, clothes-press, and two sleeping rooms below, and a fifteen feet square room, a hall, two clothes-presses, and four sleeping rooms above; a frame kitchen and wood-house, twenty by forty, is attached.

The house was built in 1835, and cost	$1,700 00
The dairy house is twenty-four by forty feet, with a basement for milking, and for carriages, was built in 1844, and cost	300 00
The corn crib is twelve by fourteen feet, with ten feet posts, and cost	75 00
The piggery is twelve by twenty-four feet, and cost..	50 00
The ice house is fourteen feet square, cost.....	25 00

The buildings are in good repair.

The fences are mostly in good repair, of which one hundred rods are of posts, with hemlock boards fastened to the post with cedar pins. Cost per rod, 65 cents. Two hundred rods of morticed posts, with four rails, cost, per rod, 75 cents. Two hundred rods cobble stone wall, three feet high, with two rails, staked above, which cost, per rod, 75 cents, exclusive of picking and drawing the stone. Four hundred rods of Virginia fence, seven rails high, locked at the corners, or secured by stakes under the seventh rail; a portion of which has upright stakes, having a yoke to connect them under the rider, which I consider the best way of staking Virginia fence. Cost, per rod, $1. Rails, stakes and posts, all of white cedar. Fences furnished with ten farm gates, that cost $5 each, and 18 sets of bars.

WM. C. YOUNG'S STATEMENT OF MANUFACTURING CHEESE.

In compliance with the rules of the Herkimer County Agricultural Society, I proceed to give a brief statement of my manner of manufacturing cheese designed for shipping, as practiced this season with a dairy of 34 cows. I use Farmer's patent steamer,

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in connection with a tin vat, inserted in a wooden one, with space enough between the two to hold sufficient water to keep the evening's milk cool and sweet, which, no doubt is an important item in cheese making. While the morning's milk is being added continue to stir the whole mass together till the cream is all dissolved that has risen through the night. In preparing milk for the reception of rennet, I prefer to vary from 82 to 86 degrees of heat, setting cooler in warm weather, and warmer in colder weather. I use no curd swelled with rennets; I stretch them on a bow, salt both sides thoroughly, hang them where they will dry without dripping, as it would tend to diminish their strength; I use enough to coagulate the milk in from 40 to 60 minutes; add sufficient annatto to the rennet to give a passable cream color to the cheese; break the curd with the hand sufficiently fine, at first requiring the labor of two persons to 100 pounds of cheese one hour, being careful to reduce the whole to as near a sameness as possible; let it settle 30 minutes; if not allowed time for the finer particles to re-unite with the mass, the result will be a loss in quantity, as well as quality of the cheese. When the whey is suitably clear, take off a suitable portion and commence heating, slowly at first, gently striking with the hands to equalize the temperature as much as possible; raise the heat to 85 or 90 degrees, varying to suit the capacity of the curd; let it stand 10 or 15 minutes to settle again, then heat slowly, stirring carefully to prevent overheating any portion that may be most exposed, the object being to have an even, well cooked curd; increase the heat to 100 degrees; keep it at that temperature from 30 to 40 minutes, stirring frequently, to prevent packing. About the middle of July or the first of August, as the heat of the season increases, and milk becomes richer, I find it best to scald as high as 104; after the whey is drawn off, stir the curd till it shews but little disposition to pack; add one pound of good barrel salt to 50 pounds of pressed curd, which must be thoroughly incorporated by continually stirring it 10 or 15 minutes, which will also promote the cooling of the curd, which is highly important, and has much to do in determining the flavor of the cheese.

Heat being the principal agent employed in decomposition, if allowed to exert its controling influence by being confined in the

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cheese must, of necessity, cause a too rapid fermentation, which would cause the cheese to puff or swell, and impart to it a rancid, unpleasant flavor, and would not admit of long keeping; press six hours, then turn and press till next morning, turning once a day on the shelf, applying whey butter to the surface, as occasion requires.

I find the shrinkage on my cheese to be, when kept till November, about 10 per cent, shrinking the most in proportion during the first thirty days. Since the middle of August I have salted one pound to forty of cheese.

In following the above rules I find the number of pounds of cheese to exceed the number of gallons of milk 10 per cent, allowing a gallon to weigh nine pounds, which I find to be correct, according to the measure used.

REPORT ON DAIRYING.

In addition to our report at the time of the county fair, we would present some further suggestions in reference to the dairying business.

And first it is all important that cows are well wintered, they should have a sufficient quantity of good, wholesome food, and be fed regular and often, and just what they will eat clean and no more. When straw is fed they should have meal enough to make it equal to good hay. At all events they should be kept in a thriving condition during the winter months. They should have good warm stables and those above ground are preferable in our opinion, to those which are styled underground.

It is important that they have good wholesome air as well as food, which they are not likely to have in a cellar, unless it is well ventilated, and even if they are so, with all due respect for the opinions of others, we prefer stables above ground, for the reason that they will stand the cold much better when turned out for exercise and drink. And we believe that they should be turned

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out a few hours every day, for exercise, except on very stormy days. They should not be exposed to the storms any longer than is necessary for them to procure drink. In the spring time, and before grass starts, they should be fed more meal and have greater care, to prevent them from running down and getting thin.

We are convinced that good feeding, either in winter or summer, pays well, and that a cow will last longer and be more profitable in a dairy if kept in a thriving condition, and by this we do not mean that they should be pampered and fit at all seasons for butchering.

The practice of sowing corn we think is a good one, and would recommend it to every dairyman. It is a good substitute for grass, and becomes fit to feed just as the pastures begin to fail, and the cows need additional feeding, and although attended with considerable labor, we think it pays well in not only adding to the quantity of milk, but likewise in keeping the cows in good condition. Apples are good feed for cows, and late in the fall, the small and unsaleable ones can be profitably used in this way.

Farmers should not be over-stocked. No more cows should be kept than can be well fed and provided for. We are fearful that many of us upon a trial, might experience the result of the old dairyman, who, after keeping thirty cows for a term of years, found that he was making but little cheese, reduced them to twenty, and made more in the aggregate, reduced them to fifteen and still made more, and this was no doubt about the number that his farm, with his management, could keep profitably.

Cows should be put in a milking beam when milked, and should be fed the whey, with what meal or shorts they need at each milking. Each milker should have his cows and milk them regular, and it is all important that they are stripped clean; this keeps their mess larger, and besides, the last milk drained from a cow is worth much more than the first. There should be much care taken in keeping the stables clean, and the milk clean while milking, and all the utensils used in the manufacture of cheese should be kept perfectly sweet.

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It is not essential whether the rennets used be new or old, but is all important that they are well cured and perfectly sweet. We prefer the common barrel to the fine sack salt, for the reason that the curd retains it better than the fine, it will not dissolve as readily as the fine, and of course a less quantity of it goes off with the whey. It is safer to use too much than too little salt. It is seldom that we find a cheese entirely worthless, in consequence of having been too much salted, while, on the other hand we frequently find them so when too little is used, of course it is better to use just enough if we can find out what that quantity is.

We should occupy just time enough in manufacturing a cheese to make it good and profitable, and no more, and should be sure, in every case to put the curd to press before it sours.

As it costs but little, if any more, to make a good article, of course it is better to make it good, for the reason that it will meet with a ready sale and a better price, and even though it should bring no larger price in market, the satisfaction of manufacturing a good article will amply repay us for the little additional trouble. They should be so manufactured that they will be good at one month or at twelve months old, they would then answer either for home or foreign consumption.

There is no necessity of using annatto, it is not a very desirable article for food, and of course cannot add to the flavor of cheese, and besides, it is a deception, and there is nothing gained in the long run by practicing deception.

In conclusion, we would say to the dairymen of Herkimer county, up and be doing, you are ahead of any other county in the State in this important branch of agriculture, and your prospects are good for years to come. Go ahead! and see to it that you are not outstripped by other dairying sections.

C. BECKWITH,
S. BONFOY,
P. ARNOLD.

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REPORT ON FARMS.

The committee on farms would respectfully report that there were but two farms entered for their examination, the one a dairy farm, by William Stuart, of Winfield, the other a grain farm, by James Furman, of German Flatts. The farm of Mr. Stuart is situated about one mile from the village of West Winfield, and contains one hundred acres of land, in a good state of cultivation. It is well fenced in convenient lots, and mostly with cedar posts and rails; the gates are light and durable, the rails and stakes are in their proper places; we saw no broken pieces scattered about; the weeds and briers are kept down, the wet places drained, his young orchard well trimmed and thrifty, his farm house is of stone, convenient and substantial, his barn is constructed of wood, with a basement for stableing cattle, well ventilated. For a more detailed statement of said farm we refer you to his report.

His crops were mostly harvested when we examined his farm, he had just commenced feeding his sowed corn, which was a heavy growth; it was sown in drills and cultivated. His cows were i good condition, and are no doubt, good milkers, but there is one thing in relation to them which we decidedly disapprove of, he has cut off about one half the length of their tails. This useful and ornamental appendage was given them by the God of nature for beneficial purposes, and, in the opinion of your committee, they ought not to be deprived of it. There can be but one justifiable reason for mutilating our domestic animals, viz: that of strong necessity, which does not reach this case; to go further than this partakes too much of ancient barbarism, and is not suited to the present refined state of society. Fearing that this may be practised by others, your committee will not let this opportunity pass without entering their protest against the practice. On the whole, taking into consideration the neat and judicious management of said farm, showing a fair profit, the condition of his dwelling and out buildings, we think that he merits the approbation of this society, and award to him the first premium of five dollars on his farm and recommend it as a model farm.

Mr. Furman's farm is about one mile from the village of Ilion, upon a pleasant road, and in a good farming neighborhood. We

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visited it too late in the season for a fair examination of his crops, they were mostly harvested. We passed through his corn field of about twenty acres; his corn was a very heavy growth, and, no doubt, yielded a large crop.

He has a good orchard; his buildings are of wood and in good condition, his dwelling is pleasantly situated, with a good yard in front, set out to shade trees. We passed over his fields, examined his grain in the barns, and came to the conclusion that it would compare favorably with the best grain growing farms in the county. He has been in possession of it but a few years, and has not had time to make all the improvements necessary, but we have no doubt, with judicious management and perseverance, he will make it one of the most pleasant and desirable, as it is already one of the most productive farms in the county. Not having seen his statement to the society, we are not prepared to write out as full a report as we could wish.

We award to him the first premium on his farm of five dollars.

C. BECKWITH,
S. BONFOY,
P. ARNOLD.

REPORT ON FRUIT.

A. L. FISH, Esq.,
President of the Herkimer County Agricultural Society:

The committee to whom was referred the department of fruit at the present county fair, are gratified to be able to state that there is a growing interest in this county in the culture of fruit, and that with respect to quality and variety, the present exhibition of fruit far excels that of any previous year. There was much competition in this department, which we were pleased to see, as it brought out as fine samples of fruit as ever adorned the bough of a tree.

The choicest varieties of apples and pears were exhibited in absolute perfection.

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It is evident that our citizens are beginning to avail themselves of the facilities which the soil and climate of our county afford for the growth and production of the finest varieties of fruit; and the present exhibition gives ample evidence that a goodly number of our citizens duly appreciate these facilities, and have learned to enjoy the luxury of the delicious apple, and of the rich and melting pear. Among the many varieties which were on exhibition we saw none, the culture of which should be discouraged or neglected.

Our soil and climate are so well adapted to the growth of the apple and pear, that nearly all of the well known and favorite varieties will flourish in our county; we do not, therefore, deem it necessary, to make any particular suggestion as to the kinds to be selected for the orchard. The main point is to select well known standard varieties, and cultivate them, and no fears need be entertained as to the result, for in due time they will produce rich and abundant harvests of fruit.

With respect to apples for market, the Rhode Island Greening, and Esopus Spitzenbergh, are among the favorite varieties. As they produce abundantly upon our soil, our farmers cannot fail to make it a source of profit to raise them. For example, an acre of ground set with forty trees of medium size, of these kind of trees, or indeed, any other good winter apples, with good cultivation, will yield, on an average, annually, about one hundred and twenty barrels of marketable apples, which will command, at least, one dollar per barrel, at the nearest places of shipment, on the canal or railroad.

Pears are more profitable to raise than apples, and generally produce more abundantly, with the same cultivation. The tree makes a more rapid growth than the apple, and our hills and valleys are very congenial to its growth. In this county, the tree is comparatively free from the numerous diseases that attack it, and blight the fruit in many localities. For instance, the *Virgalieu*, one of the richest varieties known, which is worthless in some localities, is produced upon our hills in admirable perfection. Specimens of this rich and highly flavored pear, were ex-

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hibited by Peter H. Warren, Esq., who produces them in abundance.

This gentleman assured the committee that his trees have not been affected with disease, nor has this rare and delicious fruit been subject to blight upon his soil. A native pear of this county, called by some *Earl's Seedling*, was also exhibited. The fruit is exceedingly fair, rich and melting. This variety of pear, well known by *amateurs* of fruit in this county, is justly entitled to be ranked among the most desirable varieties worthy of cultivation. For vigorous and rapid growth, fair fruit, and great productiveness, it is unsurpassed. Pears of this variety, and some *Virgalieus*, which were produced by the committee, sold this fall, in the New-York market, for $14 and $15 per barrel.

Other fruits, such as plums, grapes, &c., were also exhibited in fine varieties, and their cultivation, we are happy to say, is receiving proper attention by many of our farmers.

When we take into consideration the small amount of labor with which fruit may be grown, the certainty of large returns, its healthfulness, and the rare luxuries afforded by its use, we are surprised that its cultivation has heretofore been so much neglected. We are, however, glad to state that we have had many gratifying evidences at this fair, that the number of cultivators of fruit in our county are rapidly increasing; and that the subject is beginning to receive its due share of attention, on the part of our farmers.

In conclusion, we will state, that in the performance of our duty we have been careful not to overlook the importance of giving proper encouragement to the growth of fruit in our county, which we endeavored to do by every means in our power. The committee are satisfied that this exhibition has given a new impulse to the production of fruit in our county, and that our farmers were greatly benefited by it.

We will add, that in awarding premiums, while we endeavored not to do injustice to any one, we may not have done justice to

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all; if so, it is because all presented claims which it was not in the power of the committee to reward.

Yours, respectfully,

R. H. POMEROY,
S. EARL,
L. B. ARNOLD.

Dated Ilion, September 28, 1853.

REPORT ON CATTLE.

The committee on cattle, class No. 2d, respectfully report, that a large number of cattle were exhibited for examination. All were good, and many very fine, showing a decided improvement in care and attention to breeding stock, for which the worthy proprietors will, doubtless, be amply remunerated in a daily satisfaction of looking upon a good, thrifty stock, and an extra price obtained for them when marketed.

The competition was very close between several lots of dairy stock. That of Sanders Dodge of Winfield, laying strong claims to the first premium, as the heifers exhibited by him were very fine. But he had not as great a variety of various ages, as the competitor to whom we award the first premium.

The committee endeavored to make a full and impartial examination of all the stock in their class; but all grades and both classes of stock being mingled together, and travelling about, made the task of a satisfactory examination, very difficult. We would, therefore, suggest that the different classes of stock be kept separate in future, and confined as much as possible, to facilitate the labor of judges and insure an impartial examination.

WM. J. MILLER,
JOHN WEBER.

HERKIMER COUNTY AGRICULTURAL SOCIETY.

At a meeting of the members of the Herkimer County Agricultural Society, held at the court house in the village of Herkimer, January 2d, 1854, on motion

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Resolved, That Matthew C. Rider, be appointed chairman, and Jonathan Jones, secretary.

Alonzo L. Fish, of Litchfield, was unanimously re-elected President of the society for the ensuing year; and George Thomas, of Winfield, Vice-president; Jonathan Jones, of Winfield, Secretary; John A. Rasbach, of Ilion, Treasurer.

Resolved, That an executive committee of five be appointed.

Whereupon, the following gentlemen were chosen: Peter H. Warren, Columbia; Duane Richardson, Schuyler; James H. Clark, Winfield; Hon. E. Graves, Herkimer; Matthew C. Rider, Litchfield.

Resolved, That a Corresponding Secretary be elected from each town in the county.

The following gentlemen were then elected: John L. Eaton, Columbia; A. H. Holmes, Danube; L. B. Arnold, Fairfield; Wm. Dygert, Frankfort; R. H. Pomeroy, German Flatts; John D. Spinner, Herkimer; S. C. Washburn, Litchfield; Wm. I. Skinner, Little Falls; John Markell, Manheim; Seth Fenner, Newport; Benjamin Hurd, Norway; Albert Abeel, Ohio; Amos Gilbert, Russia; Lorenzo Carryl, Salisbury; Warren W. Richardson, Schuyler; David J. Moyer, Stark; Rufus W. Crain, Warren; Gardner Hinckley, Wilmurt; J. B. Smith, Winfield.

Resolved, That the secretary furnish each of the corresponding secretaries with a printed subscription, to solicit members to the society, for the ensuing year.

Resolved, That the vice-president act as chairman of the executive committee.

Resolved, That the executive committee and board of officers meet at Ilion, at the house of A. May, on the 31st day of January, 1854.

Resolved, That the meeting adjourn to the first Tuesday in January, 1855.

MATTHEW C. RIDER, *Ch'n.*

JONATHAN JONES, *Secretary.*

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ADDRESS DELIVERED BEFORE THE HERKIMER COUNTY AGRICULTURAL SOCIETY, AT THEIR ANNUAL FAIR AND EXHIBITION.

By Rev. Dolphus Skinner, of Utica.

Mr. President, and Ladies and Gentlemen:—In responding to the call made upon me to address you, on this pleasing and animating occasion—this joyful farmer's festival—this annual fair of the Herkimer County Agricultural Society, I have not the presumption to attempt, nor the vanity to believe I should succeed, if I were to attempt, to offer anything very remarkable, or new, or striking, or to instruct, or greatly enlighten, a class of agriculturists, of whom it would be my interest and pride to learn many things which they are capable of teaching me. Nevertheless, I respond cheerfully to the call, knowing, as I do, that I am addressing *friends*, who are proverbially indulgent to those who throw themselves upon their charity, and ever consider it more blessed to give than to receive. Should my remarks, therefore, seem more congratulatory and suggestive than instructive, or edifying, you will not be disappointed. And should I attempt anything of the hortative, I beg you will consider that I mean to include myself among the number urged to more earnest and persistent efforts to advance in the path of improvement. Otherwise, I should expect you to address me in language like the following: "Physician, heal thyself," or like this: "Art thou confident that thou thyself art a guide to the blind—a light to them which are in darkness—an instructor of the foolish—a teacher of babes, which hast the form of knowledge and of truth. Thou, therefore, which teachest another, teachest thou not thyself?" Or like this: "You are like too many professed teachers, a mere guide-board, that points out the way to others, but never goes one step on the way itself." I assume that whatever advances we may have made in times past, we are all capable of farther improvement; and it is for the two-fold purpose of mutual congratulation, and mutual improvement, that we have this day come together.

It is hardly possible for sensitive minds to refrain from congratulating each other, yea, from shouts of exultation and triumph, when they witness what our eyes this day behold, and reflect on

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how, and whence it came, and on the time it has taken to bring to pass so pleasing, so glorious a spectacle. In looking on the present we cannot avoid a retrospective glance at the past, and an anticipation of the future.

We go back, in memory or imagination, to the time when this now beautiful, highly cultivated and densely peopled valley was a wild, uncultivated waste—a vast unbroken wilderness! and the time is not very remote in the past, when were heard along these hills and vales, the low and sullen growl of the panther, just ready to leap upon his prey! the harsh, discordant howl of the midnight wolf! the lugubrious hooting of the boding owl, and the shrill war-whoop of the wild man of the forest. Go back but a single century, in the lapse of time, and see what wonders have been wrought—what changes occurred, not alone in this valley of the Mohawk, but throughout this Empire State! yea, throughout all of North America! Placed at that point, and endowed with the seer's privilege, prophetic visions of the future, we should look over the dark waters of the then future, and beyond the gory battle fields of the Revolutionary struggle! should have seen the foundations of the temple of liberty laid deep and strong, and the rising pillars of an embryo empire of freemen, mightier, by far, than any empire of Europe then was, or now is. We should have seen the hand of the oppressor, relaxing its hold on the oppressed, and dropping powerless by their side—paralized by the energies and patriotism of an uprising and liberty-loving people—the axe of the woodman penetrating and prostrating the dense forests of the country, from the Atlantic to the Alleghanies, from the Alleghanies to the Mississippi, from the Mississippi to the Rocky Mountains, from the Rocky Mountains to the banks of the far off Columbia, and along its winding waters to the wide Pacific; thence down its extended coast to the golden sands of the Sacramento, and San Joaquin; thence across the continent, just north of the tropical clime, to the Rio Grande; down its channel to the Gulf of Mexico, and around the Cape of Florida, again to the Atlantic, embracing twenty degrees of latitude, sixty degrees of longitude, and a richness and pleasing variety of soil and climate unparalleled in any nation; an extent of territory

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nearly equal to all Europe, and a commercial position far superior to that of Europe: being open alike to the Atlantic and Pacific, and commanding the commerce of the world. And while we beheld all seas whitened by our sails, and plowed by the keels of our steamers, freighted with the productions and commerce of all nations and climes, and our national flag respected throughout the world, we should, at the same time, have seen at home, with no small pleasure, a fusion of all European nations and races into one homogeneous population of enterprising and thriving citizens, embracing variety in unity, and composing what the world has never yet seen the equal of, the *universal Yankee Nation!*

We should have seen prospectively developed, not only education and religion, the school-house and the church, but agriculture and manufactures, the arts and the sciences, collegiate institutions of learning, hospitals and charitable institutions for alleviating the distresses of suffering humanity, all spreading and flourishing through the length and breadth of the land.

We should have seen the genius of a Fulton successfully developing itself in giving birth to a steed of as great celerity, and as wide a fame as those which drew the chariot of Phœbus, the far-famed god of the ancients—a steed with muscles of iron, lungs of fire, and breath of steam, and when he moves in his majesty, spits fire like old Etna, and puffs and blows, and snorts and whizzes away, over the waters and through the air, dragging the most ponderous vessels of many thousands of tons burthen, over rivers, lakes and oceans wide, with the rapidity of the carrier pigeon, or following the iron bands that link together, in strong and loving embrace, every section of our land. This iron sinewed steed bounds away, over river beds and wide spreading prairies and plains, through mountain bowels, and dense forests, and swamps, and villages, and cities, obedient to the bit that is in his mouth, or as the Apostle says of the ship, "turned about with a very small helm, whithersoever the governor listeth." Moreover, we should have seen, not only this marvelous steed, begotten in the brain of a Fulton, doing such feats of wonder through our land and the world, but could have caught a glimpse of a still fleeter messenger born of Heaven's lightning and this Republic,

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and harnessed and broken into service by the genius of a Morse! We should have seen this same strange hybrid, the offspring of the lightning and Yankee genius, under perfect discipline, carrying messages of the most weighty and important character, thousands of miles in a moment of time, and more than realizing the wonders of fairy land, and the marvels of Baron Munchausen. In short, we should have seen a few feeble and dependent colonists, numbering but little, if any over 2,000,000, spread out over this vast country, now numbering 25,000,000, and become one of the most independent, wealthy and prosperous nations dwelling on the face of the globe.

If, then, the ken of the prophet, one hundred years ago, would have enabled us to see all this, which this day our own eyes see has come to pass, what, let me ask, might not the ken of the infallible prophet now enable us to see for a century to come? Could we brush aside the veil that conceals the future from our view, and see, with unclouded eye, what awaits this great people and nation, for a hundred years to come, is there one here, think ye, possessing but ordinary sensibility, that would not be startled from his equilibrium and exclaim, *mirabile dictu!*

If we are true to ourselves, our country, and our institutions, as individuals and as a nation, nothing but the decree of Omnipotence can limit or set boundaries to our future progress. Is there anything too hard for a resolute people to accomplish, by the blessing of God, who have already accomplished, with that blessing, such stupendous works as our people have accomplished, not merely within the last century, but within the last half century? Half a century ago the greatest portion of this Empire State was almost an unbroken wilderness; few, and far between, were the dwellings of its inhabitants, especially in Western New-York. Wide-spreading forests every where intervened. Farms were comparatively valueless, for though the soil was prolific, there was no market accessible to the tillers thereof, corn and wheat selling, if at all, where raised, at from 12½ to 37½ cents per bushel. Hundreds of miles of almost impassable wilderness, traversed, if at all, by wretched apologies for roads, intervened between the waters of the Hudson and the great chain of Western Lakes.

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But the far-seeing and eagle-eyed genius of a DeWitt Clinton, aided by a few other kindred spirits, discovered what was necessary to develope the future, and then hidden resources of the country, and with a boldness, an energy, and a perseverance that feared no opposition, or failure, and tired at no obstacles, seized and applied the corrector of the evil. And though dolorous groans were uttered, and croakers foretold an utter failure, the great work went on, till the waters of the great lakes were joined in life-lasting wedlock to those of the Hudson, and both slept together lovingly in the bed of the Atlantic. Thus old Erie has been made to traverse the whole length of our State, and pour untold wealth and unnumbered blessings on all her sons and daughters; and so pleased is he with the work already accomplished, that he is continually enlarging the stream of his blessings. The stern features about his mouth (old Niagara), are softened and relaxed. The thunders of that awful voice have become the sweetest music. He allows the sons of his empire to play about his mouth, and throw their gossamer webs across his very lips, as if they would send them up forever, while along the dimples on each side of his mouth, he is preparing, by ship canals, to send additional blessings, both to American and British subjects.

If the past, then, has accomplished so much, in so brief a space, what shall be our estimate of the future? Is it possible to overestimate the future, judging by the past, when the past has so far exceeded all prior estimates? It hardly seems possible.

And yet, to realise all the blessings of the future, which we may, we must not fold our hands in idleness, nor close our eyes in slumber. Nor, while so much remains yet to be done, must we spend too much time in congratulations over the past.

It is true the productions of your county, on exhibition this day, as also at your last anniversary fair, will justify pretty large self-gratulations, especially when contrasted with what your fair showed only ten years ago. I think it was about that time that I first visited your fair, and I know I thought that Old Herkimer was a little behind the times. But you have nobly redeemed your

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reputation since then. These fine looking animals, these noble products of the field, these choice garden vegetables, these fair and delicious fruits, equal, certainly, to that which tempted mother Eve, these superb farming implements, these fine specimens of *woman's* handy work, that fully justify the high encomiums Solomon bestows on that better half of our race, in the 31st chapter of Proverbs, and that would, if we had not already the very best government on earth, inspire the hearty wish in all to come under *Petticoat* government. The proofs they exhibit that your wives and daughters understand something besides thumbing the piano; these very neat and varied articles of manufacture, the product of manufacturing enterprise and mechanical genius, all speak in emphatic language of the onward and upward progress of Herkimer. But the products of the *dairy* show conclusively that you have yet a *Fort* in old Herkimer—a fort that has never been surrendered to the enemy, and that has been fortified and grown far stronger than it was in the days of the Revolution. In the article of cheese your county stands pre-eminent, and notwithstanding so large a part of it remains a wilderness, yet it produces more cheese than any other county in the State. Oneida, it is true, has the most cows, and produces rather the most butter. As to which of the two counties produces the *biggest calves* I do not know that any statistics will enable us to decide. As it is not very material, we will not contend about that; but I hope we shall *all have milk enough to make us grow as fast as our constitutions will allow.* As the messengers from the ancient camp of Israel, when they returned from surveying the country about to become theirs, reported that there was very much and goodly land to be possessed, so we should realise that there is yet much land to be possessed, and much labor to be done, to get possession of it, and still more to be done to it after we get it into our possession. And we are to avail ourselves of the past, both by experience and observation, in order that the future may come to us laden with the blessings which we desire.

We, of this valley of the Mohawk, have a healthful climate; a soil prolific in all the necessaries, and many of the luxuries of life, and commercial and manufacturing resources so ample that we need to want for nothing. No farmer should sigh for the cit-

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ron groves of India—the spicy fields of Arabia, or the golden sands of the Sacramento. His fields and his gardens yield richer luxuries than the former, and he has on his own farm a better gold mine than California contains, and can dig far more gold with his plow, his spade, and his hoe, than the average product of the gold-diggers of California, and with far less hazard to life and health; nor need he fear any amount of competition in his business. It cannot be overdone; and he may have the whole world for his market if he choose; nor need he have any petty rivalries with, or jealousies of, any other class; the mechanic, the manufacturer, the soldier, the sailor, the merchant, the lawyer, the doctor, the minister, they are all his patrons; they all depend primarily on him for the first necessaries of life; and the more numerous they are, the more does he sell them of his products, and the more cheaply does he get his own wants in their line supplied. He can live, though not so well, nor so comfortably without them; but they cannot live without him, or his like. And whatever occupation is most necessary, ought to be considered the most honorable, because the most useful and beneficent to mankind. He who despises the occupation of the farmer, ought himself to be despised, and to suffer for the want of what the farmer produces, till he learns to respect a calling the most necessary of all occupations in life. The great Cincinnatus, after sharing the toils and hazards of battle, the laurels of victory and triumph, and the honors of State, and the glories of Rome, retired to the peaceful pursuits of agriculture as the happiest and most honorable of all occupations; and the "Father of his country," a greater than Cincinnatus, preferred the quiet shades of Mount Vernon, and the peaceful pursuits of agriculture to the shouts of victory, the laurels of Trenton and Yorktown, and all the honors of the State. So, too, the proprietors of Monticello, the Hermitage, Lindenwald, Ashland, Marshfield, and the Great Bend Farm, proved to the world the high respect they entertained for the pursuits of agriculture.

But for a farmer to honor his calling, or to derive honor therefrom, he should first understand thoroughly the nature and character of his business; secondly, he should love, or be fond of his

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calling; and thirdly, he should pursue it with diligence and perseverance. He cannot follow it either with pleasure or profit, unless he both love and understand the business. If he loves it he will pursue it diligently, and will soon come to understand it. And if he understands, loves and pursues it, he will honor it, succeed in it, and be honored by it in return. The American farmer, especially in this section of our country, may well love, and be proud of his profession, or calling. How different his lot from that of the cultivators of the soil in many countries of the old world, where the foot of the tyrant tramples on the rights of the people—where the galling chain and the oppressive yoke are every where felt; where the proud lordling, and the unfeeling aristocrat exercise their cruelties and tyranny, without mercy, on their serf-like and down-trodden subjects, who till the soil; the latter having no right, title nor interest in the soil they cultivate, while here the independent farmer owns the soil he tills, moves proudly over his fields, and surveys with satisfaction his own broad acres; owes allegiance to no haughty lord on earth; builds his neat cottage or spacious mansion, which forms his own proud castle, from which, if he choose, he can look defiance to all the world. If he is master of his hands, his head, his heart, his means, and his hardy sons and blooming daughters around him, feels that he is himself an independent sovereign and the happiest of men.

With this elevated position, and these high prerogatives, our farmers ought all to be intelligent and enlightened men. To this end they should avail themselves of all the means within their reach of improving themselves in knowledge and science generally, and especially in the science of agriculture. I am sur none of you would willingly employ a physician who was a mere quack, and totally ignorant of diseases, and their proper remedy; nor a lawyer who was totally ignorant of constitutional and statute law; nor a minister who knew nothing of theology, or the bible; nor a mechanic, who understands nothing about his trade. And why should the farmer be any more ignorant of his calling than the doctor, the lawyer, the minister, or the mechanic? His means of obtaining information, if not quite as ample as theirs,

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are nearly so, and constantly improving. He has always the opportunity of improving his practical knowledge; and opprtunities of improving his theoretical knowledge are every year becoming more ample and accessible. The multiplication and cheapness of agricultural publications—books, pamphlets, papers, periodicals, of all sizes and descriptions, from the large, splendid and elaborate treatise, to the three-penny pamphlet and paper, are such as to place them within the reach of all.

But little more than twenty years ago there was scarcely a paper, or periodical published in the land, devoted entirely to the subject of agriculture, and accessible to the masses of farmers. In fact farmers had never *heard* of them, nor knew that such publications could by any possibilty, be had. Now, there are hundreds of thousands, if not millions, circulated where there was one then; and no farmer, or farmer's family, who thinks anything of himself, or means to keep up with the spirit or improvements of the age, thinks of doing without them. He would almost as soon think of doing without his daily bread, as without his agricultural paper. And what a flood of light these various publications have shed upon the subject of Agriculture! Upon all the arts of husbandry, and all kindred arts—upon the selection of seeds, their kinds and qualities; the time and manner of planting, drilling, sowing; the treatment of plants, in their growth, and at the time of harvesting and gathering in their products; the preparation of the soil, spading, plowing, sub-soil plowing, cultivating; the examination and analization of soils; the kinds of manure best adapted to different qualities and kinds of soil; the preparation and application of manures; rotation of crops; the best and most profitable kinds of domestic animals; the mode of treating and feeding, and crossing and breeding and fattening them; on fruit growing, transplanting, grafting, and budding; horticulture or gardening; the management of dairies, and the best process of making butter and cheese; on the best mode of constructing and arranging houses, barns and other farm buildings; on fencing, drainage and irrigation; on all these and a thousand other kindred topics, deeply interesting to farmers, the

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agricultural press is pouring floods of light every year, and every month, and week, admonishing the careless, jogging the memory of the forgetful, and enlightening the ignorant. Let none refuse to patronise the agricultural press, nor say it is useless—that it leads to mere *book-farming*—to reading instead of work, and that they and their fathers got along just as well before these publications were known as they have since, while every body knows it is not true. The old fogy, that in going to mill carried a stone in one end of his bag to balance his corn in the other end, might have *thought* himself very ingenious, that it was a very lucky discovery, when he found that stone would balance corn, or meal, and that he was getting along very well; but his son of our day, has discovered that by leaving out the stone he can carry just twice as large a grist. Our fathers, who used the old fashioned plow, and barely scratched over their ground, about three or four inches deep, and were so fearful that they should plow up some poor soil that they neglected plowing any that was rich, thought they were doing well enough; but their sons know they are doing much better than their fathers did, when they with the modern instrument, plow two acres as quick as their fathers did one, and three times as deep, and get twice as large a crop from the very same field.

Our dairymen know it is better for them to keep a good breed of cows, and in such condition as to make from 400 to 600 lbs. of cheese per season from each of them, than it was for their fathers to keep a much poorer kind in a much poorer condition, at about the same expense, and make only from 150 to 200 lbs. per cow. And every intelligent farmer knows that it is more profitable to keep sheep that will shear each 12 lbs. of good wool annually, than to keep those that will shear only 3 or 4 lbs. each, and that perhaps of inferior quality.

And so of a thousand other improvements that have been introduced among, and adopted by farmers, within the last twenty-five years, and mostly through the influence of the agricultural press, and the indomitable energy and perseverance of a few leading agriculturists, whose enterprise has found its way to the public ear through the press. The rapid strides, and great im-

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provements in the arts of agriculture, within that time, are so manifest to all, that he must be stupid and purblind, who is not able to see them; and equally ignorant of cause and effect, not to see that a large share of them are directly traceable to the influence of the agricultural press. For though many farmers have not directly patronised this press, yet they have derived benefits far beyond what they themselves will willingly acknowledge, or can be made to believe. They have lived *neighbors* to those who have patronised such press; and from those neighbors they have got improved breeds of animals, improved seeds, and improved processes of cultivating their lands, rearing their animals, making their butter and cheese, and doing a thousand things that they used to do wrong; whether they have ever paid for these improvements, or this knowledge, or whether they have stolen or borrowed them, it is certain they have them. Why then not come forward like men, and own their indebtedness, patronise the agricultural press, from which they have derived so great advantages?

The farmer need not be deeply read and learned in all the sciences, though he need never be afraid that true science will injure him, yet he ought to be well informed in the science of agriculture. The science of chemistry is intimately allied to that of agriculture. The nature and peculiar properties of different substances in the vegetable, animal, and mineral kingdoms, the affinity of different substances for each other, the best kinds of food for promoting the growth and health of vegetable and animal bodies, are proper subjects of investigation, both for the chemist and agriculturist. The animal and vegetable kingdom mutually aid and depend on each other. One great and all engrossing object of the farmer should be the cheap accumulation of the the best manures, or the abundant supply of the best food for plants. Everything which has life must have food, vegetables, as well as animals; and to supply the most and best food, at the cheapest rate, is the perfection of good husbandry. To attain this end requires both study and experience.

A late writer well remarks: "The farmer, knowing the components of the grain he wishes to cultivate, of the soil upon which

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it is to grow, and of the manure which he applies to promote its growth, can, by practical experiment alone, learn whether, in the laboratory of nature, the same chemical combinations are formed, which science would lead him to anticipate. For instance: It is ascertained that one of the simple elements called *carbon*, enters largely into the composition of all plants, constituting nearly fifty per cent. of all vegetable matter; it is also ascertained that the *diamond*, the most valuable and brilliant product of the mineral kingdom, is *pure carbon*. We might, therefore, without experiment, plausibly reason that the diamond would be one of the very best of manures. And yet, (so little do we know of the mode by which chemical results are attained in the delicate organization of plants,) it is believed that the diamond would remain uncounted ages in immediate contact with the roots of plants entirely unchanged by their chemical action.

"Again, the farmer has been informed, by chemical analysis, that the fat, the flesh and the muscles of animals are each composed—differently combined, and in different degrees, of the elements constituting the different grass, grain and root crops; and the analysis of those various crops shows him which particular kind of grass, or grain contains the greatest quantity of the particular element which he desires to furnish to the animal. But the operations of the stomach, and other delicate organs of the animal are so little known that practical experiment must yet teach him whether these discoveries of the chemist will assist him in selecting the most advisable food for his animals."*

These facts all go to show us the necessity of both theory and practice, analysis and experiment. Thus you see farmers have work to do—work both for body and mind—both for hands and head—not degrading and servile work, but ennobling and glorious work, work that elevates and dignifies the man, and strengthens body and soul, hands and heart. Indolent hands and chicken hearts, and sleepy heads never win the prize. It ever was and ever will be true that "an idle man's brain is the devil's workshop;" aye, and we may add an idle woman's too. For when our first parents were placed in Eden, they were commanded to subdue the earth, and dress, and keep the garden that God had

* F. J. Betts, On the Influence of Science in ennobling the practice of Farming.

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given them; and had mother Eve been busily engaged in trimming her vines, and dressing her flower-beds, and tending her various charges, instead of parlying with the serpent, she would not so easily have fallen into the snare of the enemy. She would have said, "Mr. Serpent, I must go feed my chickens, and milk my cow, and prepare breakfast for Adam and me, and I have no time to dally with your snakeship; begone, sir, and dont hinder me!" But though in their idleness our first parents fell, yet God mercifully *compelled* them thereafter to toil for their living, and eat their bread in the sweat of their faces—one of the greatest blessings ever conferred upon our race, as every true farmer, and his buxom wife, can testify. And all such will cheerfully unite in the song called:

WORK.

"Attend, oh man,
Uplift the banner of thy kind;
Advance the ministry of mind!
The mountain height is free to climb,
Toil on—Man's heritage is Time!
Toil on!

Work on, and win;
Life without work is unenjoyed!
The happiest are the best employed!
Work moves and moulds the mightiest birth,
And grasps the destinies of earth!
Work on.

Work sows the seed;
Even the rock may yield its flower—
No lot so hard but human power,
Exerted to one end and aim,
May conquer fate, and capture fame!
Press on.

Press onward still;
In Nature's centre lives the fire
That slow, though sure, doth yet aspire;
Through fathoms deep of mold and clay
It splits the rock that bars its way!
Press on.

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If Nature, then,
Can tame beneath her weight of earth,
When would her hidden fire know birth?
Thus man, through granite Fate must find
The path—the upward path of mind!
Work on.

Pause not in fear;
Preach no desponding, servile view—
Whate'er thou will'st thy will may do!
Strengthen each manly nerve to bend
Truth's bow, and bid its shaft ascend!
Toil on.

Be firm of heart;
By fusion of unnumber'd years,
A Continent its vastness rears;
A drop, 'tis said, through flint will wear;
Toil on, and Nature's conquest share!
Toil on!" C. SWAIN.

But though you are required thus to labor and toil on from year to year, your labor is not that of the slave, or the menial, driven to his daily task, unwillingly, or through fear of the rod, or of starvation. It is the noble toil of the freeman, voluntarily performed; and whenever he chooses he can relax it, and find a grateful repose; or seek amusement or pastime in higher pursuits, or mental recreation. He is master of his own time; but idleness is no pleasure to him. Wherever duty calls, it is his pleasure, his pride, and his glory to follow. And among his weightiest and most important duties he recognises that of the proper training and education of his children. He owes it to them, to himself, to his country, to rear them in habits of industry, and teach them the labors of his own calling, so far as their capacities and inclination shall indicate their adaptedness thereto. And so far as their capacities and inclination shall show that they are better adapted to some other calling, he is to educate them with a view to that calling, and favor, and not violently cross their feelings and inclinations, unless they are evidently perverse, and of dangerous tendency. I use the term education in its broadest sense, to include the training and improvement of the whole man—physical, intellectual, social, moral and religious; for all these facul-

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ties need educating. And the opportunities of giving this complete education to all these faculties are abundant, and constantly increasing. It is not alone in the school-house that these opportunities are found. They are found in the field, in the forest, in the work-shop, in the garden, in the barn, in the ki chen, in e parlor, by the hearth-stone, around the table, around the altar, in the morning and evening prayer, in the social gathering of the neighbors, in the chaste amusements and the witty repartee. But the noblest institutions of our land, designed especially to aid us in the education of our children, of which we may well be proud. which is like the palladium and the monument of our liberties, is the *common school*, that *ark of safety* from the floods of Old-World despotism, which otherwise might soon sweep away the temples of Freedom, the altars of Liberty, and the very pillars of our glorious Republic. Here the sons and daughters of the rich and the poor, the native born citizen, and the foreigner, who has reached our happy shore, from a land of oppression, may alike meet together, and receive the rudiments and materials of a good and respectable education; an education superior, far, to that which kings, emperors, and nobles received in the most cultivated parts of the world three centuries ago.

O, then, watch, I beseech and warn you, with argus eyes, and guard, with eagle talons, this glorious palladium, the common school. Let no unhallowed hand, under whatever pretext, remove one of its foundation stones, or loosen the key-stone that crowns its glorious arch, by the diversion or perversion of its noble fund, or *any portion thereof*, to the narrow and wicked purpose of building up partition walls between the different portions of our religious population; strengthening sectarian hostility among neighbors—alienating young hearts, that should dwell lovingly together—building up a hostile and tyrannical nation within a free nation, and making our now free and happy country the anti-type of old Italy—once sunny, happy and free Italy, now sunken, down-trodden and tyrannical Italy—where freedom of speech and the press are annihilated; where the utterance of free and noble thoughts is punished with death or imprisonment,

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where the yeomanry are virtually annihilated, the masses trampled unfeelingly beneath the iron hoof of tyranny. Palsied be the hand, and blasted the heart of him who would lay profane hands on this noble institution, the common school, or seek to destroy, or pervert it from its legitimate end, the free untrammeled diffusion of knowledge through our land. See to it, then, that while ye welcome, and freely give a home to every oppressed foreigner, and homeless stranger, they be not allowed to betray, or barter away, those liberties and immunities which we so freely accord to them. Destroy the common school, or pervert it to narrow and sectarian ends, and you shake the pillars of our Republic, and the very foundation of our liberties. But with our free common schools, the universal diffusion of knowledge, our glorious Republic, our agricultural and mechanical skill, our industrious and economical habits, our commercial enterprise, our freedom of speech, and the press, we may bid defiance to the tyrants of the Old World, and the dark superstitions of former ages.

But while the farmer guards the ark of freedom, cultivates his broad acres, rears his children to habits of industry, and educates them according to his means and their capacities, he should not overlook, nor forget, the spot which, of all others, should be to him the dearest—"*home! sweet home!*" in which are garnered his most precious treasures, around which cluster his purest, his highest joys. This he should seek, by all the means in his power, to make the happiest, and the most lovely spot on earth. He should enrich and adorn it, not so much with lofty arches and columns, proud domes, fluted pilasters, gilded cornices, and costly furniture, as with a simple neatness, appropriate to his sphere, by laying out his grounds tastily, planting them with beautiful shade trees, fruit trees, shrubbery and flowers, and inviting his wife, his daughters and his sons, to share in this pleasing task, which will both gratify and improve their taste, their affections, and their dispositions, and attach them by still stronger ties to that dear spot. He should ever remember that home influences are all-powerful over the minds of youth, either for good or for evil. By rendering home beautiful and attractive to his children, he

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will be almost sure to prevent them straying or falling into bad company, or bad habits. Besides, the cultivation of beautiful shade trees, fruit trees, shrubs and flowers tends to devotion, to the elevation of the soul and its affections, and to purity of heart and life. Make your homes, then, brother farmers, both outwardly and inwardly attractive and beautiful. Flowers speak of the beauty and purity of God, for He made them; the little violet at your feet teaches you a lesson of humility. They all teach some valuable lesson, and especially teach you to cultivate the choicest flowers of virtue in your own hearts, and those of your households, and make you feel, every year, more sensibly than ever, that "There's no place like home!" That family that finds no pleasure in embellishing with shade, fruit and flowers, their own domicil, and in cultivating the home virtues, will seek in vain for true happiness abroad.

I've been where Pleasures silken bands
  Were thrown around my heart;
Where Fancy wove her fairy dreams
  And bid all grief depart;
Where Lords their servile slaves command,
  And bid them go and come;
Yet find no pleasure half so sweet
  As in my Cottage Home.

"I've been where Wealth her flowery robes
  Of gold hath spread around;
Where sumptuous fare and sparkling wine
  In plenteousness abound;"
Where Power and Fame and Beauty rare
  Like kindred spirits roam;
Yet find no place so dear to me
  As my own Cottage Home.

"I love my Cottage Home—I love
  The flowers that round it grow—
The ruffled Sunflower—blooming Rose"—
  The Lilly white as snow—
The Marigold—the fragrant Pink—
  The Hollyhock so gay—
The Honeysuckle—Jessamine—
  What sweeter flowers than they?

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"O, dearly, dearly do I love
My grove-environed home!
And on my heart its smiles shall beam
Where'er I chance to roam;
Its woodbined roof—its white-washed wall—
Its skill-wrought carpet floor—
O, never, never will I leave
My lovely Cottage more!"

JEFFERSON.

The annual meeting was held at the court house, in Watertown, on the 24th of December, 1853, and the following officers were elected: President, Solon D. Hungerford, Adams; ten vice presidents; executive committee, John Winslow, Moses Eames, Peter Doxtater, Benjamin Maxon, Amos Goulding, James Brodie, George Webb, Henry Hopkins, Elias Sage, Chester C. Blodgitt; Treasurer, John C. Sterling; Corresponding secretary, Hiram Holcom, Watertown; Recording secretary, Willard Ives, Watertown.

Number of members 420. Real estate $3,000

Receipts and Disbursements.

Amount received,		$1,126 00
Paid premiums,	$623 50	
Land contract,	156 00	
For lumber,	100 00	
Taxes,	14 76	
Printing badges, tickets and cards for two years,	53 85	
Incidental expenses,	284 89	
		$1,233 00
Balance against society,		107 00

JOHN WINSLOW.

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REPORT OF VIEWING COMMITTEE.

Mr. President:

Your viewing committee respectfully beg leave to report: That they have examined ten farms, seven butter dairies, thirteen cheese dairies, two kitchen gardens and one nursery, which comprised all the applications under these heads for the society's premiums this year.

The severe and long continued drought, and the general prevalence of the grasshopper scourge, having produced such disastrous effects in most parts of our county, as to cause but comparatively little competition.

According to our observations, the dairying portions of the county have suffered the least from these evils, but we have reason to hope the hige prices of butter and cheese will enable most of the owners of dairies to realize their usual nett profits.

The grain producing farms, however, suffer the infliction in its most aggravating form, in many cases not producing sufficient grain and fodder to support the stock until another year.

We were pleased to notice a cheerful submission on the part of farmers to these great calamities; and believing as we do, that human foresight and effort can do much to ward off the evil consequences of the recurrence of another dry season, we trust to see introduced among us a higher grade of farming than has yet been generally adopted.

During the last six years, we have experienced three seasons of drought. Grain, roots, and grasses have suffered for the want of moisture, and, in many localities, cattle have suffered, and families have been subjected to great inconvenience from a deficiency in the supply of pure and wholesome water.

These deprivations have been submitted to, year after year, without any serious efforts having been made to avert their effects. In all probability, our county will continue to be visited hereafter frequently by droughts quite as intense as that through which we have just passed.

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We believe that on all our clay or marly soils, and in fact on most of the soils in the county, such a system of farming can be adopted as will avoid the deleterious effects not only of long continued dry weather, but also of too much moisture, and at the same time add greatly to the productiveness of the land; and also, that on every farm an abundance of good wholesome water can be cheaply provided for the use of the family and of the stock.

Without entering into any argument to prove these assertions, we will satisfy ourselves by earnestly entreating our farmers to turn their attention to the subject of sub-soil plowing and underdraining, as herein we feel confident rests the secret of success in cultivating our soils during the great vicissitudes of wet and dry, to which it is subject. And farther, we ask them to reflect on the fact that about 40 inches of rain fall annually on the roofs of all their buildings; an amount which if properly gathered in reservoirs and filtered, will, in connection with a good ice-house, satisfy all the wants of the house and also of all the stock, during the most protracted drought.

And, in connection with the subject of introducing a higher grade of farming than that now practised, we would take this occasion to express our regret that so few agricultural papers are taken by the cultivators of the soil. Even among those who presented their farms or dairies for premiums, very few were able to respond affirmatively to our inquiries upon that point. But we can say that where papers were taken, we found the most intelligent men, and the best managed establishments.

To understand thoroughly the system of deep plowing and drainage, to which we have alluded, it is necessary to read and reflect upon much of what has been written upon the subject. Some agricultural books give full treatises, while the current periodicals of the day present to the enquirer the individual experience of those who are experimenting upon and practising the system.

The number of works now published elucidating the different branches of agricultural science, and the variety of weekly and

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monthly papers which are devoted to its advancement, are such that no man need remain in ignorance who has a disposition to investigate and become familiar with what is known of the principles and practice of this most important interest.

In viewing the farms entered for competition, your committee endeavored to keep in view as standard requisites and evidences of good farming, the following points:

1st. A good soil, well tilled, and kept free of all noxious weeds, both on the fields and in the roads.

2d. Lots well fenced, and suitable in number to the size of the farm.

3d. Substantial and convenient barns and stables of sufficient dimensions to contain the produce of the farm, and comfortably house the cattle kept on it.

4th. A judiciously arranged dwelling in neat condition, with a well and filtering cistern.

5th. Convenient buildings to facilitate the economical management of the farm; among which may be enumerated a wood-house, a wagon and tool house, a work-shop, a granary and corn house, a convenient piggery, an ice-house, ash and smoke house, all secured against decay by being well raised from the ground and neatly painted or white-washed.

6th. Convenient yards attached to the barns and stables, so arranged as to prevent the wastage of the liquid manure, well sheltered from the blast of winter, and provided with water for the cattle.

7th. Door yards laid with grass, and rose and flower-beds, and shaded by ornamental trees, indicating to the passer-by the dwelling of taste, health and comfort.

8th. A kitchen garden highly cultivated, and containing every species of vegetable that can be raised in our climate, with strawberry and asparagus beds.

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9th. A fruit garden or orchard, where choice apples, cherries, and plums are carefully cultivated, and where can be found neat rows of raspberry, gooseberry, blackberry and currant bushes.

These points influenced us in the decisions at which we arrived, and when competitors find that they are not among the fortunate contestants, they may find a reason in carefully comparing these requisites with the condition of their premises.

We do not pretend that we found any farm that stood well on all these enumerated points; and had we done so, we should have raised the standard higher, as we hold that "*Excelsior*" should be the motto of every Jefferson county farmer. We did not expect to find a model farm; nor do we suppose the day will ever arrive when a limit to improvement can be found.

We awarded the first premium to that farm which came nearest to the standard we had, for the time, adopted, since we understood the society intended to have their highest premium given to the farm that, in the opinion of the committee, was the best of those that was offered. Your society could never have intended that the committee should find the "best farm in the county," but merely that they should decide which was the best of those that were offered in competition. We should be loth to say that in this large populous and wealthy county, there was no better farm than that to which we have assigned the first premium. We found much to admire in the farms we viewed to which no premiums were awarded, and have taken the liberty of recommending that a premium of $5 and a copy of the Transactions be awarded to one of them.

In examining the butter dairies, we did not find that excellence and uniformity in *color*, *flavor*, and *salting* that would have resulted from a more fixed rule of proceeding than appears to have been adopted.

There would seem to be too much a hap-hazard system, or *want* of system, in the business of butter making; or too much departure from necessary rules.

We would therefore recommend a strict adherence to the following regulations:

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1st. Provide a convenient room, if possible a cellar, from 7½ to 8 feet high, so situated that the air can freely circulate through it when necessary. Let the walls be plastered, the ceiling white-washed and the floor flagged or cemented, and allow nothing to be stored in the room but the pans, milk, and appurtenances used in the manufacture. This room should be kept scrupulously clean and cool.

2d. Provide a good supply of pans, from ten to one dozen to each cow is necessary in order to vary the quantity of milk on hand according to the weather.

3d. Be regular in the time of examining the milk, which should be done twice in twenty-four hours, that the cream may be taken off as soon as the milk is soured or clouded in the bottom of the pan, and stored in stone jars.

4th. Churning should be performed every day, when a sufficient quantity of cream can be obtained; and this operation should take place in the morning, when the air is pure and cool.

5th. The butter should be freed from milk by the rinsing process, continued until it is perfectly clear, as it is necessary that all the milk should be out before it is salted. The grain is formed after salting, consequently the butter should be worked no more than is necessary to bring it to an even shade or color, after the salt is added.

6th. One ounce of good rock salt to the pound is sufficient to produce a good flavor and to preserve the butter.

7th. Every package should be soaked in strong brine at least two days before using.

8th. Cover the butter with a cloth tucked in around the edge of the package, and spread damp salt over the top.

9th. If all these precautions do not produce good palatable butter, rightly salted, of fine flavor, and fit for any market, you may lay the fault to your cows and pasture.

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In deciding upon the classification of premiums on butter, we were not entirely guided by the samples examined, but allowed our opinion to be somewhat swayed by the taste, neatness and cleanliness exhibited in the manufacture.

We found no butter not salted enough, but some so highly impregnated as to feel gritty to the touch, and to be unpleasant to the taste.

We are also satisfied that there is abundant margin for improvement in the butter dairies of this county. The competition was so slight that the most we had to do was to classify the applicants.

The competition for the premiums on cheese dairies was greater than on any other subject submitted to your committee. This is a great farming interest of our county, and we feel happy in being able to say, that, with rare exceptions, the competing manufacturers appear to have attained to great perfection as well as uniformity in the character of their products.

In each successive dairy room we visited, we saw the long tables loaded with clear, smooth, regular shaped, handsome cheeses; and it required in many cases a nicely discriminating palate to distinguish the relative merits of the different lots. So nearly did the cheese approach to uniform excellence, that in order to select and classify those to which premiums should be awarded, we were compelled to add another element to those that operated in the selection for premiums on butter. We have already indicated that we were influenced in that case by both *quality* and *neatness*. In deciding the cheese premiums, we allowed the *quantity* made to operate on our decisions. Not solely, however, since we threw entirely out of our list one of the largest yielding dairies, on account of the want of neatness, and of quality, but the consideration of quantity of yield per cow was allowed to operate and decide the question when two dairies of equal neatness and quality were in competition.

The primary object with every dairyman is to make money. He does not manufacture cheese for the pleasure he experiences, nor does he aim to make an article of the best quality unless he

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thinks that he will thus obtain a larger price. We all know that for good dairies about a uniform price is paid. It is to be regretted that more discrimination is not made by buyers, and that those who use extra pains to produce a superior article of cheese cannot confidently depend upon an extra price. Were such the case, were buyers to discriminate more carefully, we are confident the number of producers of a first rate article would be greatly increased. In determining to allow the quantity made to have weight in our decisions, we have also considered that the outlay of money and the nice judgment that secured a good lot of cows, and the economy and skill that obtained a heavy yield of milk from them, and the judicious management in manufacture that produced a large amount of curd from a given quantity of milk, are all matters worthy of your approval; and when we found one contestant producing twice the annual yield per cow that is shown by another, we could not allow a little finer flavor in the latter to overbalance the wonderfully increased quantity produced by the former. In one case under our consideration, in a dairy of 26 cows, the yield per cow, during the last year, was 281 pounds of most excellent cheese; while in another dairy of 35 cows, the yield per cow was 540 pounds of very good cheese. The difference here is enormous and can only be accounted for under the supposition that great care had been used in selecting the cows, and great skill in manufacturing the cheese in the larger dairy; it is to this care and skill that we wish to pay a compliment.

We beg leave to submit the following suggestions in the method of manufacturing cheese, as the substance of what we gleaned from the best dairymen during our tour.

1st. Save the rennets without the curd, and salt them thoroughly. Sage, lemons and cloves will add to their strength, and impart a pleasant flavor to the cheese. The quantity to be used must be determined by experience.

2d. The milk for setting the curd should be from 85° to 90° according to the weather.

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3d. Break up the curd carefully with the hand, and scald or cook gradually by pouring on whey. There is much difference of opinion as to the degree of heat necessary to make good cheese. All agree, however, that the curd must be thoroughly cooked, and also that it requires more heat in cold than in warm weather. Perhaps more scald to 110° than to any other one mark; yet some good dairymen only heat to 100°; but in this case it is necessary to let the curd cook a long time, and also to work very dry in the sink before putting in the hoop.

4th. Cool and work the curd thoroughly in the sink, and salt one pound common salt to 17 or 18 pounds curd.

5th. Be sure that the hoop, boards, cloth, &c. are all kept sweet.

6th. Press gradually at first, but after six hours put on all the pressure you can command and you will have a good, firm cheese with a smooth rind.

There are many subjects that attracted attention during our tour, but the length to which this communication has extended, warns us that we had better leave further suggestions to our successors.

We beg leave to remark, however, that in visiting the nursery recently established in Watertown, we were pleased to find a collection of fruit and ornamental trees, shrubs, roses, herbaceous plants, bulbous and flowering roots, raspberries, gooseberries, strawberries, currants, esculent roots, &c., thus offering to our farmers an opportunity of beautifying their grounds and adding to the attractions of their farms without being subject to the risks and delays hitherto encountered. We trust our farmers will patronize establishments of this kind, since by raising fruits and flowers they not only add to their own enjoyment, but they can provide a surplus to be profitably disposed of in our numerous villages.

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Our awards are as follows:

Best farm in the county, John T. Davenport, LeRay.
2d best, " " C. C. Chase, Watertown.
3d " " " Clift Eames, Rutland.
4th " " " Nathan Cooledge, Philadelphia.
Best dairy of butter, W. H. Skeels, Watertown.
2d best " " H. M. Ball, Rutland.
3d " " " P. K. Thurston, Watertown.
4th " " " Wm. P. Ball, Rutland.
5th " " " Nathan Cooledge, Philadelphia.
6th " " " Curtiss Goulding, LeRay.
Best dairy of cheese, E. F. Carter, LeRay.
2d best " " Wm. Fuller, Rutland.
3d " " " Jeremiah Parker, Watertown.
4th " " " Amos Mallory, Rutland.
5th " " " Gardner Towne, Rutland.
6th " " " Wm. Rogers, LeRay,
Best nursery, Becker & Greene, Watertown.
Best kitchen garden, Moses Eames, Rutland.
Best flower and kitchen garden, J. B. Kirby, Brownville.
Best ditching on a farm, J. S. Vandeburgh, Alexandria.

All of which is respectfully submitted.

WM. DEWEY,
A. P. SIGOURNEY,
ALMANSON TIBBITS,
AMOS GOULDING,
THEOPHILUS PEUGNET,
HENRY ORVIS,
Viewing Com. Jeff. Co. Ag. Society.

Watertown, 14th Sept., 1853.

WATERTOWN, JEFFERSON CO., *Feb.* 21, 1854.

B. P. JOHNSON, Esq.,
Sec'ry of the N. Y. State Ag. Society.

Dear Sir:—In reply to your request for information in respect to the agricultural condition of Jefferson county, I will state a few facts and inferences.

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An agricultural society was formed in Oct., 1817, under favorable auspices, and the first cattle show and fair was held in Sept., 1818, favored with the presence of Gov. Clinton, who addressed the people assembled on that novel and interesting occasion. Annual exhibitions of stock of various kinds, domestic manufactures, agricultural implements, productions of the soil, &c., have been continued with one or two exceptions, awakening a commendable spirit of emulation among the tillers of the soil. These county gatherings have all been held at a central point, and the extremes have not derived an equal benefit therefrom; hence the origin of such societies in towns at a distance, affording the people in every neighborhood easy facilities for informing themselves of the improvements being made, as well as for displaying the results of their well directed efforts in advancing the cause of agricultural improvement. Fairs have been held in the south part of the county, in the town of Ellisburgh, annually, for several years, which have awakened a becoming interest in the cause in that location, and distributed a handsome amount in premiums; also, at Cape Vincent, in the northern part, a town society has been in successful operation for several years, sustained vigorously by practical farmers, who are reaping a rich reward, in the present, to themselves, and conferring much practical benefit in their community.

The number of agricultural books and periodicals read by our population is rapidly on the increase, producing intended and natural results, as shown conclusively by closer attention to the selection of seeds sown, the preparation of the soil for their reception, the time of sowing and harvesting, and in general terms, cleanliness in husbandry.

The value of farms has increased perhaps to the amount of five per cent. of their worth, within the last year.

Our county is emphatically devoted to dairying; more cows were kept the last season than any previous one, yet owing to the severe drought of summer, and the unexampled destruction of vegetation by grasshoppers, the entire yield must be from ten to twenty per cent. less than some former years. Our strict atten-

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tion to the best mode of manufacture of butter and cheese dairies, has brought them into favorable notice in the city of New-York, where they are mostly marketed.

The small amount of fodder secured in preparation for winter feeding, required considerable reduction in farm stock; and although the stock of animals is reduced far below what it has been for the last ten years, the price of food for stock rules very high. Cows and beef cattle, and those being reared to supply their places, as the present stock is used up, were the first to be disposed of, so that the county has perhaps twenty-five or thirty per cent. less horned stock than the usual average; sheep are very much diminished; horses but little, if at all, reduced in numbers.

The native breed of cattle, and those crossed with the Devon and Durham, are mostly reared. Native cows, and those of a small compact form brought from Canada, most used and preferred as milkers, and thought to be most profitable in dairies. Several very fine animals, of the Devon and Durham breeds, have been introduced, and stock from them reared, with much attention, of a superior order; but are not particularly sought after by our dairymen. For work, Devons stand prominent; while for the beef market, Durhams appear to have the preference. More recently, some very choice Ayrshires have been imported, and bid fair to succeed better for milkers than the improved breeds earlier introduced.

The prospect is, that more ground will be planted and sown the present season than in any former one, while difficulty in obtaining cows will be likely to cause fewer to be kept than usual in our dairies.

Fruit culture is rapidly gaining the attention of the best cultivators of those soils best adapted to its successful prosecution. Many farmers have for a long series of years, allowed apple trees to occupy their best land, which seldom produce fruit, and when produced, of very inferior quality, when by a little trouble in grafting, the same trees might have been induced to produce fruit bountifully, of some choice variety. The Rhode Island Greening, Roxbury Russet, Esopus Spitzenburgh, Baldwin, Twenty Ounce,

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and Imperial, or "Jefferson County," are among the winter varieties successfully cultivated among us, prove prolific, and attain a high degree of perfection.

Pears, cherries, and many of the smaller fruits, such as currants, grapes, gooseberries, raspberries, and strawberries, are easily cultivated, and amply repay the attention bestowed upon them, in the health and enjoyment imparted to such as engage in their propagation.

Most respectfully, your obedient servant,

JOHN WINSLOW.

LIVINGSTON.

The annual fair was held at Geneseo, on the 28th and 29th days of September. Great crowds were in attendance at the cattle show. The exhibition of stock, in some departments, was not equal to some previous exhibitions; yet, there were many superior grade cattle in each class, which were universally admired, and would have given complete satisfaction to a people who could be content with stock second to the best in the Union, or in the world. Much discussion was had among the different proprietors, upon the subject of improvement of stock, which resulted in the formation of a stock association for the purpose of importing from England, some of the best specimens of pure blood cattle.

The agents of the association are already in England, in the execution of the mission confided to them. High hopes are entertained of their success. The farmers of Livingston are fully aware that they possess a soil not surpassed by any county in the State, and that the valley of the Genesee ought to produce the best stock in the State, if not in the Union. The exhibition of horses was admired by every beholder; it was remarked by many persons who were accustomed to attend State fairs, that the horses exhibited here, might justly challenge competition with the State. The show of agricultural implements was such as to call forth a strong expression of high esteem for the skill and perseverance of our mechanics.

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All seemed to acknowledge that the sympathies and interests of the farmers and mechanics were blending more intimately from year to year. The inclement state of the weather prevented as full an exhibition of domestic and horticultural products as would otherwise have been had. On the whole, the fair was productive of good; a spirit of emulation was infused into the minds of many who had been but indifferent spectators, the fruits of which we hope to see exhibited at our next annual fair.

A plowing match was had on the fourth of June last, under the direction of the society, at which more than usual zeal was manifested, and the execution of the work was such as rarely, if ever, was excelled in the State. The sons of some of our respectable and wealthy farmers entered the field, with a degree of zeal and skill that elicited great applause. This branch of agriculture has greatly progressed in this county since the formation of this society. A poor plowman is looked upon at this day, with as much indifference as a quack doctor, or an illiterate and unskilful engineer. It is now generally conceded that deep plowing is indispensable to the continued success of the cultivation of wheat, for which this county has long been celebrated. Our best wheat growers plow from eight to ten inches deep. Plaster and clover are used extensively for the purpose of preparing the lands for the best crops of wheat. A portion of the farmers in this county, have paid great attention to the breeding of sheep, and the growing of wool. Their labors have been amply rewarded, and it is believed that few, if any counties in the State, can exhibit better flocks of sheep, or better specimens of wool. There is also much zeal in the cultivation of fruit of different varieties.

Treasurer's Statement.

Amount received from former treasurer, ...		$10 59
For memberships at annual fair, ...	$201 00	
Less counterfeit money taken by late treasurer,	1 00	
		200 00
Contributed by citizens of Geneseo, towards expenses of fair, ...		111 00
Contributed by J. Freeman, York, towards expenses of fair, ...		2 00

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Received for sales of lumber at fair, in 1852, ...		12 00
" " " 1853, ...		73 97
From Treasurer of State of New-York, ...		122 00
		$531 56
Disbursements for erecting buildings, fitting up grounds, 1853, ...	$156 12	
H. V. Colt, late secretary, postage, $1.89, printing, $54.87, ...	56 76	
Premiums awarded at fair of 1853, ...	181 00	
		393 88
Balance in hands of treasurer, ...		$137 68

Premiums awarded at fair of 1853, amounting to $49, yet remain to be paid; and several books, awarded at same fair, are yet to be purchased.

On the second day of the fair, an address was delivered before the society, by the President, C. R. Bond, which was listened to by a great crowd in perfect silence, from which the following extract is made:

The second article of your Constitution declares: "The object of this society shall be the promotion of agriculture, horticulture, and household manufacture."

This was no trifling undertaking, and for the purpose of testing the necessity of your organization, and the fidelity with which you have adhered to the objects avowed, let us turn, for a moment, to a history of this county. Within the recollection of a few individuals, who yet remain among us, almost her entire territory was an unbroken forest. Messrs. Phelps and Gorham became the proprietors, and the lands were offered for sale.

The few adventurers who had traversed these streams, and over these hills by Indian trails, told to the hardy sons of New England, of the richness and beauty of the Genesee Valley.

Their desire to possess it was excited; but the sad lessons of caution they had recently learned in the bloody contest of the

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revolution, enforced with the tomahawk and scalping-knife, united with the fact that the whole west was the hunting grounds of the Indians, who had been often times incited by agents of the British government, to attack frontier settlements, to roast alive the father and mother, and dash out the brains of their children, quelled the rising spirit of adventure. Soon, however, there came here and there, along this valley, an individual, or a family, to breast the trials and hardships of pioneer life, and the axe was laid at the root of the forest, and by repeated single blows, nature's bulwark was attacked and summoned to surrender.

If there be any class of men entitled to grateful remembrance by us, for their patient enduring toil, for their daily sacrifice of bone and sinew, in conflicts renewed from day to day, to change the form of matter and prepare the way for the embellishment of civilization, it is that band of pioneer axemen, who cradled in orphanage by the fate of Indian or Revolutionary warfare, tore themselves away from social life, and in the deep solitude of the forest, began the work of demolition of nature's strong defences, the growth of centuries. Of such, were they, who made the first marks of agriculture in this county. They struggled, they desponded, they struggled again and again; they bowed the mighty oaks and towering elms, and imprinted upon their track, in imperishable letters, to be read of all men who should pass this way—veni! vidi! vici! And what was their outfit for this mighty onset? An axe of five pounds weight, a knapsack laden with a change of coarse apparel, three or four days provisions, and a musket or rifle to supply food from the surrounding forest. No cloth was laid, no bed was spread for them, save that which was alike prepared for the wild beasts that surrounded them. They felt that the axe, wielded by muscular power, must strike the first effective blow. In the second onset, the element of fire could be made subservient to their wishes, but the primary instrument of agriculture, and which has not been superseded by modern invention nor wielded by any other than muscular power, as true to the mark and effective to the purpose as the sling of David, was the axe.

The progress of settlement was retarded by sickness, by rumors of savage depredations, either meditated or committed, yet a few

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acres, here and there, were sold, or exchanged for lands in New England, to actual settlers. As late as 1808, lands of the best quality were offered, on credit, at from $5 to $10 per acre. Next in the train of reverses, came the war of 1812; and no county in the State, of equal population, furnished a larger number of soldiers to defend the frontier. The trees were left half cut down, the grist for the next day's bread half unthrashed, and the smouldering fires, upon their new and half cleared fallows, were left to the care of the winds. The able bodied, between the ages of eighteen and forty-five years, marched in solid column under command of Gen. Wm. Wadsworth, who distinguished himself so signally on Queenston Heights. The few who were left behind, looked around and saw that their picked men were gone, and too many, alas! never to return. I regret, that the limits of this occasion, compel me to leave unnamed a host of gallant heroes who volunteered to fight the frontier battles in defence of their humble homes. The horrors of war spread over the settlements, now left in charge of the aged, the disabled, and the incidental assistance of childhood. The log-houses along the main road from Buffalo to Canandaigua, were crowded almost to suffocation by families fleeing from the approach of the enemy, and begging their way back to New England. The mangled corses of fathers and brothers were gathered from the battle fields, and sent to their former habitations, for burial among relatives whose last sight of him they looked to for protection, and loved above all others, told to their bleeding hearts that the fatal tomahawk and scalping knife had deprived them forever of their only earthly succor. Fear came upon these feeble settlements, that they should never be permitted to live in peace so near the outline of British and savage possessions, and that the cause for which their sons had so nobly bled, and nobly died, would never triumph. Of course, then, agriculture must be sorely smitten; she must have permanent fixtures, and *faith*, that if seed is sown, the harvest will be reaped in peace.

In 1815, peace was restored, and the surviving soldiery returned to their peaceful vocations, and then followed such a depression of prices of products, and such a pinching scarcity of money, that lands became a drug; they had no marketable value; all was despondency; the purest wheat would command only forty-four

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cents per bushel—and at some periods, could not be exchanged for money at any price.

As the completion of the canal drew on, lands were sought for, prices advanced, and the field of faith in *man* was opened on a large scale; almost all sales were made on credit; how largely pledges were redeemed, your thousands of title deeds will show. The Erie canal, be it remembered, was, and is, the great pathway from primitive helplessness to mature strength; and let him who counts it unworthy of his affectionate regard, distrust his patriotism, and let his country forever distrust him. Since its completion, the value of lands has been, with few intermissions, increasing; and now, the farming lands in this county, are worth nearly twenty millions of money. She has a population numbering over 40,000, pays a tax of over $55,000, out of which, $15,000 are paid for the support of schools, and $10,000 for the support of the poor. Her personal property is worth, probably, $10,000,000. What has so changed these values, and furnished the means of payment of such large sums in taxes? Labor! and chiefly manual labor, applied to the cultivation of the soil.

College and district school edifices and churches, have been erected in such convenient numbers, that whether we turn to the right or the left in traversing her territory, here and there one or the other of the former, reminds us of our duty to our children, and the latter, of our duty to our common Creator, and the sabbath he has appointed, so that he that is weary may rest by the wayside, and refresh himself from these fountains of intelligence, or offer the oblations of his heart to "*Him*" who watereth the hills from his chambers, who causeth the grass to grow for the cattle, and herb for the service of man, that he may bring forth food out of the earth, and bread which strengtheneth man's heart.

Her seminaries of learning, second to none in the State, now beckon the attendance of our youth, where, by experiments and oral elucidation, the sciences are taught as connected with agriculture. I have had the gratification of repeatedly witnessing, at one of these institutions, the progress of several classes in agricultural chemistry, and ever at the hour of parting, my heart beat

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with gratitude that the light of science is descending to the common mind, that the doors of her temples are being unbarred, mingled with regret that I had ceased to be young.

An excellent chemical and philosophical apparatus, and a spacious cabinet of minerals, are among her means of efficient instruction, and the names of over three hundred students were enrolled upon her catalogue of the last term, and the commencement of the present term, encourages the hope that still greater patronage awaits her efforts. With the institution located in the eastern section of the county, I have had no personal acquaintance; but her fame is abroad, and her catalogue is a sufficient guaranty that she has a strong hold upon the popular affections.

We have, also, a county library, comprising more than 5,000 volumes, including a medical library of great value, with an appropriate building, and a liberal annual income, for its increase and support, and free to every citizen of the county.

Its founder was a pioneer; a zealous agriculturist; "the first path master west of Cayuga lake;" none knew better than he the paucity of means of intellectual improvement among the masses. To furnish material for developing the common mind, he made this beneficent bequest. He will be remembered to the latest generation. The genius of mechanism has fixed among us her abiding habitations, and among all the sons of agricultural ancestry, none return to their paternal spheres a more acceptable offering upon the altar of filial gratitude. Every year, new implements are contrived, or old ones remodelled, that claim our regard and invite our patronage, that serve to reduce the necessity of muscular exertion. They come to us as a new generation, to alleviate the toils imposed upon advancing age. The mechanics of our county, as a class, commend themselves to our generous patronage. May victory succeed victory, in their zealous efforts to unfold the mysteries of endless circulation of matter and force, and to successfully adapt the combinations of science and skill, to a more extended dominion of mind over matter.

These, gentlemen, are the achievements of infancy, the results of rudimental agriculture, the gleanings of industry, saved from

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year to year; and in space of time, comprising two generations of men, nearly all of whom are laid in the tomb. Your society has had existence twelve years, and has been instrumental, we all do know, in giving impulse to agricultural and horticultural improvement. There has been improvement in cultivation, in many instances, and marked improvement in the quality of stock, and a spirit of generous rivalry has shown itself, and inquiry as to better methods has been excited clearly traceable to the influence of your society. Yet there is too much apathy. The burdens of the society are cast upon a few individuals, while every farmer in the county should have enough of pride of participation, or selfishness, to induce him to take part with us in our efforts to improve our agriculture, horticulture, and household manufactures.

Farmers! you must have a policy of your own, or consent to be dictated as to the measure of progress you may make. Look around you, on every side, there is growing up a power which attracts the gaze of princes and noblemen of other climes; a power derived from concentrated wealth, and consolidated interests. In honied phrase, it offers you patronage, fellowship, division of privilege, while it seeks pre-eminence in your legislature, and covertly seeks to empower the few to control the many.

Transportation has become the great desideratum of concentrated capital, and production the carcass where the eagles are gathered.

The signs of the times indicate, that this power will be exerted to overthrow your canals, and monopolize the transportation of products from the Pacific to the Atlantic; and the cultivators of the soil will be seen around your capitol a protesting and petitioning minority, or be labelled "live freight for the next train."

Methinks you will yet see that in the distribution of profits, transportation will get the lion's share. How will you meet this overshadowing power? How confront its gigantic strides? Not by pliant lassitude; not by repellent forces among yourselves. We ask no unequal privilege; we seek not to crush any other department or investment; but we ask for co-operation, for the increase of funds, by the accession of members. We ask for zeal

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in the promotion of the objects of the society, that agriculture may not dwindle into insignificance, or be spurned from the position rightfully her own, in the great process of civilization. In our individual capacity, we do not derive benefit from the acquaintance of a man who habitually treats us with neglect, or contempt, no matter what his reputation may be for science, or virtue, or wealth. So this society derives no benefit from the fact, that the county of Livingston has all the requisites for unrivalled success in the promotion of agriculture, if the fee simple holders pass by on the other side and give us no aid. The small contribution of one dollar a year, from every farmer in the county, would amount to a sum sufficient to defray the expenses of permanent fixtures, amply spacious for our annual exhibitions, and also a course of lectures in each school district in the county upon topics immediately connected with agriculture. Were every farmer in the county a zealous member of this society, we should command the respect of those who now assign to agriculture a degree of insignificance that may dine at the second table, and lodge on the floor. But I am detaining you too long. I can only hint at some few of the various topics that seem to me to claim your immediate and constant regard.

The inclement weather of yesterday, prevented as full an exhibition of stock as was desired; yet in almost any other county in the State, the show of stock would have been commendable in quality and quantity. But Livingston county should not be content with an annual exhibition of stock, or the products of the soil that could not, in strict justice, in point of quality, invite the competition of the entire Union. The weather also prevented as full an exhibition of horticultural products, and articles of household manufactures, as was expected. Enough was shown, however, to stimulate our zeal, and to evince to every beholder, that our wives and our daughters lay their hands to the "distaff and eat not the bread of idleness." Tell me, farmers, of another rural county in the State or Union, equipped like this, for moral, intellectual, social or religious, agricultural or mechanical progress! Tell me what is yet lacking in your artillery of means, to become the model of progress of the right kind? Is there any-

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thing wanting, but united, concerted movement, to improve ourselves and our method of conducting the interests committed to us? There are living voices behind us, that inquire with great vehemence, whether we shall transmit this goodly heritage, these fruits of toil and suffering, improved or unimpaired; or whether in the hey-day of annexation and consolidation, agriculture is to be deserted, or partially nursed, with an occasional smile of recognition grudgingly bestowed, maintain for a while a struggle with conflicting interests, and finally perish beneath thousands of iron wheels. Change! progress! are the trumpets of the present day, and the affections and pursuits of mankind, seem to have no abiding locality. If the cultivation of the soil must hold the second place in the order of your pursuits, and your farms and your dwellings left to the inroads of time, without annual repairs, it does not require the vision of prophecy to descry the bitter end. Dilapidation does not commend itself to our appreciation of value or beauty. Charmed with the luxuries, and lured by the vices of the city, and bedizzened with the hope of attaining positions of greater notoriety, your sons will desert you on the approach of old age, or at your decease desert the homestead, and squander the avails in riotous living, or polite and fashionable idling, or vulgar and vicious loafering around our various watering places.

Has the city allurements to vice? The country should have allurements to virtue. Among these, are improvements in (if I may so call it) external agriculture. Make your dwellings in conformity to the style of modern, rural architecture, and cultivate around them flowers and ornamental shrubbery. Let order and neatness pervade all about your homes, purify your fields, plow deep, turn up a soil yet unseen and undefiled, to the action of the elements, remove every stump and stone that can obstruct the plow, assert and maintain the Monroe doctrine in relation to the Canada thistle, exterminate them wholly, not only in your fields, but in your highways, see that your gardens afford all the healthful varieties of herbs, fruits and vegetables, drain every stagnant pool and every bog, make your farms and your dwellings the objects of your early care, see that your flocks and your herds include none but the best you can rear, send up to the fountains

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of intelligence your sons and daughters, appropriate to your daily use, according to the established rules, the volumes contained in your county library, make your firesides the attractive sources of intellectual improvement, appropriate all these prepared methods of social enjoyment, and these broad and verdant meadows, and these fruitful and attractive hill sides that surround you, will invite your immediate successors to a permanent residence. On the present actors in the field of agriculture, devolves the duty of opening the highway of success to those who are waiting legitimately to possess this domain.

Posterity will hold you to a rigid accountability of your stewardship, the searching scrutiny of retrospective criticism will inquire whether with the thirty millions in your hands, you have given new impulses to productive industry, and evoked from the genius of invention such new schemes as best promote the growth of agriculture, and keep alive our remembrance of those, whose whole capital was deposited in a knapsack, yet laid the foundations of this social fabric, with pain and watchfulness, and cemented it with their blood, or whether you have lulled by the wheel way of dazzling pursuits, till the cultivation of the soil has no claim upon your further regard, and "like Napoleon in exile you live on the past." Standing by the tombs of your pioneer and suffering fathers, and hailed by the living voices in our rear, we are adjured by the living and the dead, to be faithful to our trust, and preserve, inviolate, the foundations of universal prosperity. Having detained you far too long, I return my sincere thanks for your kind attention, and tender you my best wishes for your individual prosperity and the extended usefulness of this society.

Officers for 1854.—Chauncey R. Bond, Geneseo, President; Theron Steele, Lima, D. H. Bissell, Geneseo, Abram Vernam, Mount Morris, Vice-presidents; James T. Norton, Geneseo, Secretary; E. R. Hammatt, Geneseo, Treasurer.

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MADISON.

The twelfth annual fair and cattle show of this society was held at Morrisville, the 7th, 8th, and 9th of October. The weather was quite unpropitious, it being very cold and rainy. The society had also located their annual fairs at this place for a term of years, and sufficient time was hardly given to get the grounds and buildings completed: yet notwithstanding all this, the show was really a good one, and such as every citizen of the county might justly be proud of.

We have a building 50 by 60 feet, put up in the most substantial manner, shingled and covered with pine boards, and battened. This building has two floors, and the roof being self-supporting, gives to the upper hall quite an imposing appearance. This second floor we use for the floral and ladies' department, and when the weather is unfavorable, (as this year,) it forms a very appropriate place, with its fine decorations, for the annual address. We have seven acres enclosed with a good permanent fence, eight feet high. The grounds are just east of Morrisville, on quite an eminence, which gives a fine view of the entire village. There is also within the enclosure a beautiful grove of some three acres. Some little distance from the entrance to the grounds we have a very nice and convenient ticket and business office.

The grounds and fixtures were somewhat more expensive than anticipated, and the society are now considerably in debt; yet with more favorable weather another year, we intend to redeem our credit, and besides have concluded to offer premiums to the amount of over $600.

To those who have watched the progress of agriculture in this county for the last few years, in connection with this society, its influence for good cannot be questioned; we now have cattle, horses, sheep, swine and poultry of the most approved breeds; and by a reference to the former premiums of the State society, it will be seen they are second to none in the State; and so far as grain and root crops are concerned, Madison county will compare favorably with any of her sister counties.

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It will be seen by the above description of buildings and grounds, that the society have everything arranged for the best accommodation of exhibitors. The choicest articles can be presented without fear of injury or exposure and we confidently anticipate that the thirteenth show of this society will far surpass all of its previous exhibitions.

Officers for 1854: President, S. P. Chapman, Clockville; Vice-presidents, Lewis Raynor, Cazenovia; M. D. Bailey, Wampsville; Francis Coolidge, Madison; Treasurer, Alpheus Morse, Eaton; Corresponding Secretary, R. D. Palmer, Clockville; Recording Secretary, Ledyard Lincklaen, Cazenovia; and an executive committee of one from each town.

S. P. CHAPMAN, *President.*

CULTURE OF WHEAT.

At the request of Ellis Morse, of Eaton, I have this day measured a piece of land upon which winter wheat was harvested last season. The quantity of land is two acres and seventy-eight rods.

GURDON EVANS,
Surveyor.

EATON, *April 4th*, 1854.

The wheat harvested was of the Soles variety, and measured one hundred and three and a half bushels, giving a yield of forty-one bushels and eighteen quarts per acre. No manure had been applied to this land for ten years previous to preparing for this crop, and it had been mowed for twenty years past.

In the spring of 1851, it was well manured with common stable manure (not still manure), and plowed six inches deep. Part was planted in corn, and part in potatoes. In 1852, the piece was sown to barley. After harvesting the barley, it was plowed eight or more inches deep, and sixty bushels of unslacked stone lime sown upon it; then it was thoroughly harrowed, and four

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bushels of wheat sown, harrowed and rolled. The wheat was sown about the 10th day of September, and harvested about the 1st of August.

The expense of raising the crop was as follows:

Interest on the land, at $100 per acre,	$17 43
One-half of sixty bushels of lime for present crop,	5 13
Four bushels of seed wheat, at $1.12½,	4 50
Three days' plowing with oxen, at $1.50,	4 50
One and a half days' harrowing and rolling, at $1.50,	2 25
Harvesting and drawing,	5 00
Thrashing and cleaning,	5 00
	$43 81
Value of 103½ bushels of wheat, at $1.50,	$155 25
Straw (two tons),	6 00
	$161 25
Deduct expenses,	43 81
	$117 44

Net profit per acre, $47.16.

The object of publishing this statement, is especially to call the attention of the farmers of this vicinity to the fact, that wheat may not only be raised in this region, but raised at a handsome profit, by properly preparing the land. At an early day, this was regarded as among the best wheat regions of the State; but of late the impression has prevailed that it cannot be cultivated at a profit. It is not supposed that our soil is naturally as well adapted to wheat as some other parts of the State, yet I am confident that our home consumption could be supplied from our own raising.

From the fact that I am engaged in distilling, some might suppose that still manure had been applied to this crop; but, as will be observed in the preceding statement, only common stable manure was used, such as every farmer may and should command.

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I am satisfied that the application of lime is the true secret of raising a good crop of wheat, or rather lime after a good dressing of manure. From thirty to fifty bushels to the acre I believe to be a proper quantity.

I may add, that the soil referred to is of an ordinary gravelly loam, on a stiff hardpan at from twelve to twenty inches from the surface.

ELLIS MORSE.

EATON, *April* 5, 1854.

BROOKFIELD TOWN SOCIETY.

The Brookfield (Town) Agricultural Society held its fourth annual fair and cattle show on the 28th and 29th days of September, 1853. The exhibition exceeded any of its predecessors in quality, quantity, and interest, and called forth the strongest encomiums from the great concourse of people gathered from the surrounding country, and we believe all went away satisfied and convinced that a town society can live in our town.

The good effect of our organization is not seen and felt alone at our fairs; the farms and their appurtenances, the horse before the carriage, the cattle upon the hills, the highways even, and the work of "fairer hands," feel the impetus of improvement, clearly traceable to the vivifying influence of a healthy competition engendered by this society. An item that appears to have had great influence in producing these results, is the distribution of some of the best agricultural papers as premiums.

At our annual meeting, held January 10th, 1854, the following officers were elected: President, Stephen Hoxie; Vice-presidents, Oliver B. Hinkley and David P. Curtis; Secretary, L. A. Saunders; Treasurer, Luke Hoxie; Executive Committee, Lewis D. Maxson, Horace Babcock, Samuel H. Burdick, Heman Hill, Silas Whitford, Doct. A. L. Saunders, Peleg Green, Andrew Babocck, and Oliver P. Babcock.

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Finances are as follows, viz:

Cash and interest from last year,.....	$94 91
Receipts during fair,.....	351 85
Add fifty volumes Transactions American Institute, from State Society, estimated at,.....	50 00
	$496 76
Expenses of fair and premiums, including seven copies Country Gentleman, twenty-nine copies Cultivator, eleven copies Genesee Farmer, and thirty-three vols. Transactions American Institute,.....	213 84
Balance on hand, including seventeen volumes Transactions American Institute (estimated at $1),.....	$282 92

We also awarded thirty-two diplomas as first premiums.

This society tenders its grateful acknowledgments to the State Society, for their liberal donation of Transactions of American Institute.

All of which is respectfully submitted.

L. A. SAUNDERS, *Sec'ry.*

BROOKFIELD, *Jan.* 12*th*, 1854.

MONROE.

Dear Sir,—To make a minute report of the doings of the Monroe County Agricultural Society for the year 1853, would require considerable time and space, which perhaps you would not deem profitable, but the plan of our proceedings, and the results, may be of profit to other societies, which like ours, are wanting in general interest and usefulness throughout their counties.

Our fairs had previously been held in the city of Rochester, and had well nigh lost all interest in a large portion of the county. At our annual meeting, we resolved to try to create a more general action, by holding two side fairs, two plowing matches, and

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one central fair, in connection with the Genesee Valley Horticultural Society, in the city of Rochester. The side fairs to be held one in the eastern, and one in the western district of the county, and in the town affording the largest number of members to the society, previous to our next meeting, to be in the month of June. In pursuance, a good degree of interest was taken, and an increased amount of money raised, which enabled us to offer a liberal list of premiums. The town of Sweden, in the western district, raised two hundred dollars, and the fair was located there, to be on the 27th of September. The town of Rush, in the eastern district, raised one hundred and fifty-one dollars, and had the fair there, on the 29th Sept, and in the city of Rochester on the 1st day of October.

Our plowing matches were held, one in the town of Riga, on the 4th day of June, and a fine display of skill in this important department of farm labor, was witnessed by a large assemblage of the hardy yeomanry of our county; seventeen teams plowed each one-fourth of an acre, in a style which showed the way that Monroe county is enabled to produce great crops. Over forty dollars was awarded and paid to successful competitors. Our second plowing match was held in the town of Pittsford, on the 7th day of October.

Our fair on the 27th of Sept., held at the village of Brockport, in Sweden, though the day was wet and rainy, was a grand exhibition of the interest taken by the farmers, mechanics, and citizens generally, in these great holidays of the farmer. There was a larger exhibition of cattle, and also of horses, than has ever been witnessed before at any county fair in our county. The show of sheep, and swine, was not larger than usual, but there were some very fine animals of French and Spanish Merino exhibited by S. S. Sheldon, of Sweden, and also by others, of both the fine and coarse wool varieties. The show of fruits, flowers, vegetables, and of domestic productions, which was held at the railroad depot, was very creditable and elicited much praise from the crowd of visitors. There were some very fine landscape paintings, as well as other miscellaneous and fancy articles exhibited, which showed the skill and taste of our artizans and mechanics.

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On the 29th of Sept., our fair was held at East Rush; the day was fair and comfortable, and the enterprising farmers of the eastern part of our county improved it well, by bringing out for exhibition their fine stock of thoroughbred cattle, fine horses, sheep, and swine. The show of stock, in numbers, was not as large as that at Brockport, but in thoroughbred stock excelled. There were many very fine animals of the Durham blood, which were well deserving of the prizes they received. The show of sheep and swine was quite large and creditable, showing good taste and skill in breeding. The exhibition of agricultural machinery was large; our enterprising mechanics and manufacturers, as also our dealers in these wares in the city of Rochester, were well represented, which showed well the march of improvement in this department. The exhibition of useful implements of husbandry, of home manufactures, at Brockport and Rush, is deserving of more than a passing notice. Monroe county is not second to any rural county in our State in this department of improvement, and no county can boast of more enterprising manufacturers, or ingenious mechanics.

Our fair in the city of Rochester, on the 1st day of Oct., was held in the court-house and yard adjoining. The building is very large and commodious, and having permission to occupy the whole building, we appropriated separate rooms for the different branches of the exhibition; and such a show of fruits and vegetables has seldom been witnessed at a county show in the State of New-York; the many nurserymen and amateurs throughout our county were all there, as well as some from adjoining counties, and well represented by the choice varieties of fruits and flowers cultivated by them, and in that perfection which is not found in the State of New-York elsewhere than in the Genesee Valley The show of dairy products, and domestic manufactures, was good; so also in the fine arts, and mechanical skill and manufactures. In connection with the show, we had an exhibition of poultry, which embraced all, or very many of the tall chickens of our county, as well as some bantams and other domestics of kin, of less boisterous pretensions. In the afternoon, an excellent address was delivered before the society, in the court-room, by the much lamented John A. Delafield, of Geneva, now deceased.

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Our society has now an interest and importance in the entire county, which promise future success, and under judicious management, will continue to advance in interest and usefulness, as intelligence and the true spirit of improvement shall move upon the agricultural mind.

The annual meeting of our society was held at the court-house in Rochester, on the 11th day of January, at which the usual business of closing up the last year's matters, and preparing for the coming year, was transacted.

Officers elected for 1854.—President, F. P. Root, of Sweden; Vice-presidents, S. S. Sheldon, of Sweden, L. D. Mitchell, of Pittsford, Daniel Lee, of Rochester; Corresponding Secretary, A. E. Harmon, of Wheatland; Recording Secretary, Joseph Harris, of Rochester; Treasurer, E. S. Hayward, of Brighton.

Our treasurer's report of finances is as follows:

Cash in treasury at last annual meeting, ...		$318 46
Deduct unpaid bills and premiums of 1852, ...		94 00
Balance, ...		$224 46
Cr. By cash for members tickets, ...		519 00
for admittance fee at horticultural show,		251 00
from State Treasurer, ...		194 00
		$1,188 46
Dr. To sundry expenses during the year, ..	$219 76	
To cash premiums paid, ...	721 36	
paid for medal dies, ...	60 00	
paid for silver medals awarded,	150 00	
		1,151 12
Balance, ...		$37 34

In addition to the above, there has been, of the Transactions of the State Agricultural Society, and American Institute, one hundred and thirty-one volumes awarded and paid.

F. P. ROOT.

SWEDEN, *February 28th*, 1854.

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REPORT FROM F. P. ROOT, PRESIDENT MONROE COUNTY AGRICULTURAL SOCIETY.

B. P. JOHNSON, Esq.:

Dear Sir:—Your circular sent to me in August last was received in due time, but want of time and necessary information to give reliable answers to your inquiries, has induced delay till the present, rather than a want of interest in the matter. I have no means of giving accurate returns of the production of our county the past season, as we have no statistics taken; but from the best information I can obtain from intelligent men, and an estimate compared with former statistics, the following would not be far from a correct report. The chief or most important product of our county is wheat, and if correctly stated in our last census report, we stand first on the list, as having produced more wheat than any other county in the United States. Our soil and climate are admirably adapted to the production of this crop, and is generally thought to be more remunerative, hence more attention is paid to its cultivation than to any other by the mass of farmers. Our crops are increasing in quantity and yield per acre; perhaps a greater crop or better quality was never harvested in our county than the last; it is variously estimated at from 1,800,000 to 2,000,000 bushels, the former I think nearest correct. The average yield per acre about 23 bushels, for the whole county, though some sections much exceed that, and some farms produce 40 bushels, and even upwards of 50 bushels per acre have been produced.

A better system of farming generally in our county, is pursued now than formerly, and as a consequence, better crops are obtained, and still there is great need of improvement, and still a chance for greatly increased crops, which time and intelligence will furnish. The past season has not been favorable for the corn crop, in consequence of the extreme wetness of the spring, though a fair crop was produced, a fair estimate would be 800,000 bushels; average yield per acre 40 bushels. A higher estimate is put upon this crop now than some years since and more attention is paid to its cultivation.

Barley, oats, peas and beans are about an average crop, a fair estimate may be, barley 150,000, bushels, oats 450,000 bushels,

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peas 75,000 bushels, beans 10,000 bushels, potatoes 500,000 bushels, hay 65,000 tons, average yield per acre 1½ tons. There is a small increase in the number of acres under tillage, for all purposes, as there are some timbered lots being cleared off for wood annually, and the land brought under cultivation. I think there is no increase to note in the number of domestic animals kept; more attention is being paid to improved breeds of stock, and the average value of animals is higher than formerly. The greater portion of our stock are grades, though we have many animals of pure blood, and such are much sought after; Durhams, Devons, and Herefords all have their admirers; as also the French and Spanish Merino sheep, also the long wooled. We have no particular increase to note in scientific farming, other than that farming is more reduced to a system, and more attention is being paid to agricultural intelligence communicated through the press, and a better understanding generally of thorough cultivation, judicious breeding and rearing of animals.

Draining is receiving attention where most needed, and with good results, though comparatively little has been done that is needed and that will be done in a few years. The value of our farms is steadily increasing and will continue so to increase as improvement developes the resources of our county. Within the last ten years lands have advanced fifty per cent, and were never advancing faster than at present. Our principal market is at Rochester, though a large portion of our produce is marketed at Brockport, Scottsville, and at several other smaller ports along the canals. The costs of producing crops, or the expense of the farm under good management amounts to about thirty per cent of the products.

Thus have I taken up your inquiries in order and made a hasty reply to each, according to my best information and judgment. My estimates of crops are based upon the last census report, comparing the crops of 1849 with those of 1853, and will be found, I think, very nearly correct.

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MONTGOMERY.

The thirteenth annual fair of the Montgomery County Ag. Soc'y was held in the village of Fonda, on the 6th and 7th days of Oct. last. Although the weather was quite unfavorable, the attendance was very large. The exhibition, fine in some departments, was, as a whole, not quite equal to some former ones. The show of cattle was creditable to our county. The number was unusually large, and contained many superior animals, mainly Short-horns. It is evident that many of our agriculturists are paying increased attention to the raising of the improved breeds of cattle. The case is somewhat different in respect to horses. Those shown at our fairs, generally, as well as at our late fair, prove quite conclusively, that the "Black Hawks," "Morgans," and other celebrities, are not as well known among us, as some others of less renown. At our late show, however, many of the horses would compare favorably with any heretofore exhibited. The sheep and swine did not present a very imposing appearance, being few in numbers, and mostly of medium quality. The dairy products were as usual, not very extensive, but excellent. The farm implements, machinery, &c., exhibited, were noticeable for the superb workmanship and ingenuity displayed in their manufacture. A "farm fence," shown by Messrs. McElwain & Co., of Amsterdam, was much admired for its simplicity and cheapness, and will, no doubt, prove a very durable and valuable fence—a real acquisition to the farmer. The department of domestic manufactures was very well filled. The articles, generally, were of a character to reflect much credit upon the contributors. We had a fine display of fruits and vegetables. The kitchen garden was abundantly represented; and the orchard gave of its golden treasures, adding a fresh attraction and a pleasing embellishment to the exhibition. The show of poultry was very large and fine, and attracted crowds of fowl-amateurs. In rearing the improved, or rather popular breeds of poultry, our county has, for a short time past, given decided indications of progress. I regret to say that the display of flowers, and of needle and shell work, was not so extensive as that of last year. The specimens of needle work were

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quite numerous, however, and many of them afforded pleasing evidences of patient industry, as well as delicate skill, and a keen sense of the beautiful, in the fair contributors. The prosperity of our society has thus far been owing, in a great degree, to the generous encouragement of its fair patrons. Let it continue to receive their kindly aid, and it will ever go on prospering and doing good.

In the afternoon of the second day, a large concourse of people assembled in the court room, and having been called to order by James Lansing, Esq., the president, listened to an address of much eloquence and power, from Stephen Sammons, Esq. Some appropriate remarks were then made by Rev. D. Van O'Linda, and on his motion, it was resolved to hold the next annual fair for *three* days, the last day to be devoted to the sale of stock, &c.

Officers for the year 1854.—For President, Cornelius Phillips, of Florida; Vice-presidents, William Knox, of Canajoharie, and William W. Ostrander, of Mohawk; for Secretary, Thomas N. Beebe, of Mohawk; for Treasurer, Peter Fritcher, of Mohawk. The next fair is to be held at Fonda.

BOYD R. HUDSON, *Sec'y.*

AURIESVILLE, *December* 30, 1853.

NIAGARA.

In pursuance of the statute requiring a report to you from the several county societies of the State of New-York, and as President of the Niagara County Agricultural Society, I submit the following report:

The annual cattle show and fair of this society, was held at the village of Olcott, on the lake shore, in the town of Newfane, in the beautiful pine grove of "pickwick memory," and peculiarly adapted to all such out of door exhibitions; having in addition to the shade, afforded by the pinery for animals on exhibition, and teams of visitors, a delightful green park on its sunny side, of sufficient dimensions for the erection of our new and capacious

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tent, the display of carriages, agricultural implements, and other mechanic arts, the show of all animals, except horses, which were exhibited on a miniature race course, enclosing an area of ten or twelve acres, near at hand. Much credit is due to the citizens of that beautiful village, for the ample and well conceived arrangements of grounds and accommodations; never was an agricultural fair held in Niagara county, where more pains were taken to render it agreeable to competitors and visitors; and never was time more propitious, or the heavens less so—not a drop of rain fell for many days previous, nor even clouds to intercept our intercourse with the great source of light and heat; and the good citizens of the adjoining towns testified well by their presence, both gentlemen and ladies, their attachment to the anniversary of the county society.

But, I am compelled to say, that all this beauty of scenery, adaptation to comfort and convenience of exhibition, did but partially attract the owners of good stock, and manufacturers, and holders of agricultural and mechanical implements.

There was a fair show of sheep, and a show of one or two specimens of calves, not excelled at any exhibition of the kind in the State. Never was a better show of horses, or higher blood exhibited in this county. It would have graced any county in the State, and their owners have reason to be proud of their enterprise and taste in this department. Equally flattering might have been the eulogy of their president in his annual report, of the owners and breeders of cattle and other stock in the county, had they seen fit to bring them to the fair, and show us their best specimens: quite sure I am that Niagara county, young as she is in agricultural and general improvement, is little behind her older sisters in a thorough bred and beautiful brute progeny.

The show of implements was any thing but an *exhibition;* the plowing match, also, only *three teams* entered for competition! Shame on the farmers and their boys this once.

The ladies—florists and horticulturists, far out did the farmers and mechanics, as our new tent, so ample, capacious and well adapted to exhibit their wares, fruits and flowers, well testified.

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There was also a good display of domestic manufactures, and household goods, including some specimens of oil and other paintings, for parlor setts, which did great credit to the ladies who executed them, and which show that our county is not behind her sisters in the fine arts. The dairy, also, was well represented; but there was a meagre show of grains and roots, and but few competitors for premiums on field crops, arising, probably, from the lateness of the publication of the premium list, which, owing to the neglect of the executive board to appoint the viewing committees—to my own illness and close confinement during the summer, and the further delay of the secretary to get out and distribute the bills after the appointments were made, the time was too short.

Through my advice, the board enlarged their premium list on grain crops, and extended the number of classes, so as to excite emulation among farmers upon a larger scale, as, for instance, ten dollars for the best ten acres of wheat, and five dollars for the best five acres, with their intermediates.

The general practice of offering premiums on the products of so small a parcel of ground as one or two acres, has not seemed to me to answer the entire design. While I admit that the prominent idea is to stimulate to the greatest production at the least cost, and, perhaps, the most signal test *as such* may be obtained upon a small scale, still, it may be seriously doubted whether the result being so very unusual, and even extraordinary, in most cases, does not have an effect to retard and discourage competition, rather than otherwise.

Farmers, though "slow and sure" in their progress, are, in general, a sagacious class of men, and seldom venture on experiments that fail to present, at first sight, both ease of attainment and profitable returns.

A more gradual process of attaining the summit or maximum of agricultural production, seems desirable. I am settled in my convictions, that premiums upon a larger number of acres, for all grain crops, would have a greater effect upon the *aggregate* pro-

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duction of the county and the State. The results, of course, would not appear quite so brilliant, because the average of the best field of considerable size, would seldom, if ever, reach the yield of a single one, under the highest culture; but they would present a more magnificent view of the agriculture of the State, and bring home to all classes of her enterprising citizens, surer indications of more solid and increasing wealth.

I am somewhat in the habit of judging other men by myself; and although one of what, in this State may be styled "large farmers," and one too who raises generally as large crops, that is, obtains as large yields, as an average crop, as our *best* farmers; often pressing the soil up to forty and fifty bushels wheat, sixty to seventy bushels of oats, and sixty to eighty-five bushels of Indian corn to the acre, and have obtained over one hundred bushels of the latter, on a single acre; still I have always preferred to distribute the manure and labor necessary to produce the very *abnormal* growth which would command a premium on a small parcel of land, over a larger surface; and have hence never enjoyed the satisfaction of seeing my name prefixed or affixed to a premium, nor have I ever, for the above reasons, offered any, even my best crops, for premiums. I confidently believe there are multitudes of our best farmers who feel as I do.

While on this subject, permit me to amplify a little farther and briefly mention a few other reasons why I think agricultural associations produce so little benefit.

1. The State, by furnishing a small amount of money, assumes the control of the whole. The society is not left at discretion to expend the State bounty and its own contributions in its own way as I think every society ought.

2. The method of appointing viewing committees or judges is very exceptional—not the slightest responsibility is felt by any of them, and in most cases not the least care or concern whether their duties are discharged faithfully or even at all. Hence injudicious and partial awards are made, however much pains the board may take in their selections of men, but few of them will attend to the duties assigned them; hence vacancies occur and

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have to be supplied by the President once, twice, and even three times during the same day.

3. The absence of compensation to the officers, who are required to do all the work, bear all the responsibility, and foot up unpaid balances, and oftentimes carry loads of censure for the slightest causes.

4. The deficiency of funds in almost every county to purchase grounds and erect suitable buildings for the purposes and business of the society.

To remedy these evils, the State should make a larger appropriation, and allow it to be expended in the discretion of the officers of the several societies, in the purchase of grounds and buildings, or the procuring of lectures on agricultural chemistry in the several towns in the county, that the present race of farmers may be enlightened in the *science* of producing large crops. What does it avail that a body of farmers ignorant of scientific laws, come to the county fair and see the productions of their neighbors, or bring their own, however good or large they may be, and make "written statements" of the manner of production, when not one of them has brought out a single idea that is either new or useful beyond the farm on which it grew?

Farmers in general are incapable of trying experiments, on account of their ignorance of the science upon which the experiment depends. How many farmers in the State of New-York know that the great resources of manure are chiefly derivable from air and water, that from 95 to 99 percent of all his plants and animals are made up of four simple elements, and nearly all of these are carbon and the elements of water? How many can tell how gypsum, an article so commonly used, effects such a mighty result, as it often does, in the produce of a single crop, often with only 100 pounds to the acre, doubling the yield, and sometimes more? How many know enough about vegetable physiology to understand the digestive process of the plants he cultivates—how and why the seed vegetates, and hence its necessary conditions—how and whence vegetable food is derived, and hence the necessary condition of that food—what is food, and

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what not, and hence what substances to supply in manuring their land?

How many understand the nature and chemical constitution of the soil they cultivate, and hence what is deficient and necessary to supply when they refuse to return remunerative crops? much more to know how to produce the largest abnormal growth.

For reasons above hinted at, none, or comparatively few farmers, except those who are better educated, and possess the means to do so, will ever compete for the bounties of the State or the home society. The consequence is that clanish feelings arise, and false views are entertained as to the design and general objects of the associations; and hence one great reason why premium crops are so seldom imitated by the masses.

Now if the money annually expended by all the societies of the State in premiums and expenses, were appropriated for a few years, or a portion of it, in the employment of suitable lecturers, with appropriate apparatus, to go into the several towns, and in company with the President of the county societies, organize farmers clubs, and demonstrate before them, their sons, wives and daughters the principles of agricultural chemistry, and show how the farmer might, at a cheap rate determine the deficiency of his soil, show them in what *manuring* consists, and thus enlighten the present race of farmers I apprehend the aggregate of production would much sooner be doubled than by the present system of premiums and fairs. But these need not be dispensed with; the farmers are in general liberal men, as well as sagacious, and they will perceive the benefits to their families in the present tense from such lectures, and to their crops, and have their wealth in the future, and once in operation they will never let it cease for want of funds.

But I promised brevity.—The officers of the several societies should receive pay for their services, and should appoint the judges, a single umpire in each case, and require him to visit and inspect in person all animals and crops intended to compete for premiums, dnring the season previous to exhibition, and collect

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all the facts important to be known, and report the same for publication in the county as well as State Transactions.

What avail is it that a cart load of such statements as are usually forwarded to Albany, are cribbed up in the archives of the State society? what avail are those that are published in the volumes of the Transactions? comparatively few ever reach the farmers' dwellings or their eyes in any form. I do not mean to say they are not useful, and would well supply a deficiency if the farmers would possess themselves of them, but they cannot be found in the house of one farmer in one hundred; and if offered to them as premiums, they wont take them home, and simply because they don't know enough of the *science* of their calling to be capable of appreciating them. Let them be enlightened and they will prefer books to money.

ABSTRACT FROM THE PRESIDENT'S ADDRESS.

1. Relations the commonly cultivated crops bear to the soil on which they grow.

This is best shown by the analyses of soils and their crops, which was exhibited in large type on a black-board, in the following form:

TABLE I.

MINERALS FOUND IN THE ASH OF CROPS, WHEN BURNED IN THE OPEN AIR.	Analysis of 3 soils.			Commonly cultivated crops in this country.															
	Fertile without manure.	Fertile with manure.	Very barren.	Indian corn.	Wheat.	Oats.	Barley.	Rye.	Peas.	Beans.	Turnips.	Parsnips.	Beets.	Carrots.	Potatoes.	Hay.	Apples	Peaches.	Cherries.	Pears.	Plums.
Silica,	64.8	83.3	77.8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alumina,	5 7	5.1	9.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Lime,	5.9	1.8	.4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Magnesia,	.9	.8	.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Potash,	.2	....	....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Soda,	.4	....	....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oxide iron,	6.1	3.0	8.1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Oxide manganese,	.1	.3	.1	..	..	0	..	..	0	0	..	..	..	0	..	..	0	0	0	0	0
Chlorine,	.2	....	....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sul. acid,	.2	.1	...	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Phos. acid,	.4	.2	....	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

The above table represents, in the first column, a soil that has been cultivated in annual succession with grain crops, for

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more than two hundred years, without manure of any kind, and is still fertile as ever.

The small quantities of some of the ingredients as compared with the large amounts extracted by grain crops, potash and phosphoric acid for instance, shows that it is nearly exhausted, or that it contains fragmentary portions of rock which contain these elements in abundance.

The second column shows a soil readily amended by the addition of ordinary farm yard manure.

The third shows a soil barren, because first, it contains too much iron; and second, because ordinary manuring will not supply the deficiency shown by the blanks.

The remaining part of the table shows simply, that in the root, stem, leaf or fruit, all the mineral elements of the first soil, are found upon analysis, except the blanks standing opposite to the oxide of manganese.

This table cost me considerable research, and I believe will be found correct. It is of great value for the purpose of illustration as it most clearly demonstrates, what are the necessary ingredients of a fertile soil.

2. Relations plants bear to the atmosphere.

This was also shown upon the black-board, in large type, as follows:

TABLE II.

ORGANIC ELEMENTS OF PLANTS, OR THAT PORTION WHICH BURNS AWAY IN OPEN AIR.	Atomic equivalents.	Atmosphere with its gases in solut'n.					Substances in grain and fruits.										Animal.	
		Atmosphere.	Carb. Acid.	Nit. Acid.	Ammonia.	Water.	Woody fiber.	Starch.	Gum.	Sugar.	Albumen, Gluten, Caseine.	Acetic acid.	Tartaric acid.	Malic acid.	Citric acid	Oxalic acid.	Animal fiber and caseine.	Animal fat.
Carbon,	6	..	1	..	..	..	12	12	12	12	54.60	4	4	4	4	2	54.45	79.00
Hydrogen,	1	..	..	..	3	1	8	10	10	12	7.30	3	2	2	2	..	7.06	11.4
Oxygen,	8	1	2	5	..	1	8	10	10	12	22.28	3	5	4	4	3	22.71	9.58
Nitrogen,	14	2	..	1	1	..	..	..	..	..	15.86	..	..	..	..	..	15.76	.....

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The above table shows the organic constitution of all our cultivated crops, in equivalents of each element their several substances respectively contain; the chemical, or organic constitution of animal flesh and fat; also the constitution, in equivalents of air and water, and the several substances held in solution in the atmosphere, which are not only food for plants, but which constitute from ninety-five to ninety-nine per cent of their entire substance.

Any one at all acquainted with the subject, will perceive, at a glance, how readily one substance may be converted into the other, and how admirably the gaseous solution or mixture, we call atmosphere, is adapted to the formation of the organic portion of plants and animals.

For instance, to change woody fiber into starch, it is only necessary to woo into chemical wedlock two atoms of water. Starch is converted into gum, or cane sugar, by a simple molecular transposition; and these into grape sugar by combination with two more atoms of water. So with the acids. And these again may easily be formed from the gases of the atmosphere. For instance, woody fibre and starch:

To 12 atoms carbonic acid,.....	C. 12	..	O. 24
Add 10 atoms water,.....	..	H. 10	10
Sum, ...	12	10	34
Subtract excess of oxygen, ...	..	..	24
Composition of starch,.....	12	10	10
Subtract excess of water,.....	..	2	2
Woody fiber, ...	C. 12	H. 8	O. 8
Again: if we take four atoms carbonic acid,.....	C. 4	..	O. 8
And add two atoms of water,.....	..	H. 2	2
Sum, ...	4	2	10
Subtract excess of oxygen, ...	..	..	5
We have tartaric acid, ...	4	2	5

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And so of every vegetable and animal compound; were our knowledge sufficiently profound, we could as readily demonstrate all the metamorphoses.

One thing I wish to call attention to, which is shown in the above table, and which was the *main design* of the address, namely, the similarity in composition of vegetable and animal substances, and the adaptation of the one to produce the other.

The carbonaceous substances, woody fiber, starch, gum and sugar, are adapted to the production of fat—neither having any nitrogen in them. The nitrogenous compounds of the vegetable albumen, gluten and caseine *alone*, are adapted to produce *flesh*, (see table.) The animal, therefor, produces nothing, changes nothing, except simply a different arrangement of the same elements in chemical combination in the vegetable, and this even is not done in the case of flesh. The vegetable prepares it *ready found*, and deposits its fibers in the gluten of the seeds, and the animal, *lazy creature*, only lays it on its bones, which again grow from the ready found phosphate of lime in the vegetable.

If therefore we wish to increase *flesh* on the animal and obtain *size*, we must attend to the means adapted to this end.

The frame of the animal is composed of bones, and bones are made up largely of phosphoric acid and lime, but these do not require so much attention as the flesh making principles of the vegetable. It will be seen by reference to the table that the animal and vegetable fiber both contain *nitrogen*, and in the same proportions. Now, while the atmosphere contains carbonic acid in sufficient abundance for vegetable growth, and while this gas is readily admitted into the vegetable through its leaves, and decomposed there by the light of the sun, and carbon assimilated in sufficient quantity; and while the atmosphere also contains a superabundant amount of nitrogen in its own constitution, and the gases held in solution, as my table shows, yet the plant never obtains *one particle* from the air, as it does carbonic acid gas.

All its nitrogenous food is received at the root, and must hence be drawn from the earth. This fact teaches us that the farmer has something to do, if he would put *flesh* as well as fat on his animals,

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and furnish his family with good nutritious food. But, 3. A good supply of nitrogen in the soil not only furnishes *flesh making* food, but vastly increases its *quantity* also. This was also shown upon the black board in readable type, by the following table drawn from the experiments of Hermstadt.

TABLE III.

	No manure.	Vegetable manure.	Cow dung.	Pigeon dung.	Horse dung.	Sheep dung.	Human dung	Ox Blood.	Human urine
Yield, ...	3 fold.	5	7	9	10	12	14	14	12
Gluten,.....	9 per ct.	9	12	12	13	32	33	34	35
Starch,.....	66 do.	66	62	62	61	41	41	41	40

The above table represents so many parcels of very poor sandy loam soil, equal in all respects until the manure was applied; equal quantities by weight of each substance was applied to each plot, as represented in the table, and equal weights of seed wheat of the same variety planted on each, and the figures show: 1, the increase of quantity; 2, the improvement in quality; 3, that as the nitrogenous compounds *increase* the carbonaceous *decrease*. Many other things are shown by Hermstadt's tables, but the above is sufficient to illustrate my position.

Now if this was the only experiment of the kind, too much reliance should not be placed upon it, but it is only one among many to the same or similar effect, and shows clearly that the *quantity and quality* of grain crops can be *mightily* improved by attention to a *single* element in the manure applied.

4. How is a sufficient supply of nitrogen to be obtained and retained in the soil?

The following table was also exhibited on the blackboard chart.

TABLE IV.

Equivalent manurial value of different substances so far as nitrogen is concerned.

Four pounds nitrogen are contained in 14 lbs. dog urine, 20 lbs. guano, 25 lbs. dry night soil, 50 lbs. fresh bone, 130 lbs. flesh

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offal, 120 lbs. pea straw, 250 lbs. clover roots, 500 lbs. clover, 750 lbs. sawdust, 850 lbs. buckwheat straw, 1,000 lbs. yard manure, 1,400 lbs. oat straw, 1,700 lbs. wheat straw, 1,750 lbs. barley straw.—J. F. W. Johnston.

One pint of human, or one quart of horse, or 4 quarts of cattle urine will produce 60 lbs. good wheat.—Dr. Lee.

100 Men excrete annually 2,312 lbs. nitrogen.—Cuthbert W. Johnson.

Four pounds gypsum produce 100 pounds clover, and 100 lbs. gypsum will fix in the soil 60 pounds nitrogen.—Leibig.

M. Barrel a French chemist, has estimated from long continued experiments, that in a fall of rain of 24 inches, there is brought down from the atmosphere, on each acre of ground, nitrogen, 45 lbs , nitric acid, 103 lbs., containing about 26 lbs. nitrogen, ammonia, 19 lbs., containing about 15 lbs. nitrogen ; total, 86.

This quantity, if measures were adopted to retain it in the soil, with or during manuring of the land, would furnish an abundant supply for continual cropping.

Now, if proper care was taken by our farmers to preserve the urine of their animals and families, and add all to the above, with due care of the mineral elements of the soil, I hazard nothing in saying that the quantity and quality of farmers produce might soon be doubled.

But can the farmer secure this nitrogen? I answer, he can—or nearly all. The thing that is requisite, is to put into the soil and manure heaps, and yards and stables, substances containing heavy acids, which will displace the light carbonic acid, and readily combine with the volatile ammonia, and thus retain it in the soil and the manure.

Sulphuric and muriatic acids are the best and cheapest within our reach, and these are contained in gypsum, copperas and common salt.

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Now, suppose the soil receive a coating of eighty to one hundred pounds gypsum, spring and fall, with two to three bushels salt to the acre, annually, and manure applied every fifth or sixth year, I will, from my own experience, insure any farm of an ordinary good soil, first rate crops of grain *perpetually*, if he stirs his land well, and is otherwise a good farmer.

Suppose, also, a ton of gypsum be used during the winter and spring, while his manure is accumulating, and it is nicely distributed throughout his manure, and gypsum and copperas freely thrown into his family vault, and its contents severally mixed with his other manures, all the urine of his stock absorbed with straw or other litter, muck or saw dust, think you the farmer who does all this, (and every farmer ought to do it,) will not have an abundant supply of nitrogen? aye, and raise the very best crops, and make most money of any farmer around him?

But I will not trouble you with any further details. The address, you will see, was extempore—based upon the tables upon the black-board; consequently, I cannot send you the address.

I thought the above, the best method to make the most durable impression on the mass of untutored mind before me, for while I addressed their ears, their eyes were presented with the facts and figures.

After the address, the following officers were elected for the ensuing year, and the next fair voted to be holden at Lockport.

Officers for 1854.—Hon. Washington Hunt, President, of Lockport; Moses Crapsing, first Vice-president, of Lockport; John Gould, second Vice-president, Cambria; A. N. Brazee, Secretary, of Lockport; Henry Flagler, Treasurer, of Lockport.

Receipts from all sources,.....		$435 00
Premiums and expenses,.....	$234 25	
Cost of new field tent,.....	214 00	
		448 25

J. H. BENNETT.

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ONEIDA.

The thirteenth annual industrial exhibition of the Oneida County Agricultural Society, was held at Utica, on the 13th, 14th and 15th days of September last.

The interest of the occasion, however, was nearly destroyed by the calamitous result of a drenching rain storm during the two last days of the exhibition; and in the absence of a better excuse for the short comings on that occasion, we would adopt the words of Mr. James Rees, Esq., chairman of the committee on *lots of dairy cows*, who, in his report, said that

"The committee were quite unwilling to believe that there was any diminution of interest felt by the people of the county, in our annual exhibitions." To the inclement weather, is doubtless to be attributed the meagre display on this occasion. The farmers of Oneida must "*take no steps backwards*," and under *fairer skies* we may reasonably hope to see the same interest manifested, and the same attendance which has heretofore so signally distinguished our annual festival."

But notwithstanding the meagre display of lots of dairy cows, and the inclemency of weather, there was a very creditable display of other kinds of stock on exhibition. The show of fruit was equal to any before had, and would, doubtless, compare with any county exhibition of fruit in the State.

The manufacturers' and ladies' departments were arranged under tents; but the steady and increasing storm, was the cause of exhibitors both withholding and withdrawing their articles from view. This event proved the necessity of erecting better and more permanent fixtures for exhibition. The funds of the society were much decreased the present year. The report of the treasurer shows the sum on hand to be $770.

The writer heretofore having given a history of the products of the county, their market destination, and value, a recapitulation, at this time, is deemed unnecessary.

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The following are a portion of the articles upon which premiums were awarded at the winter meeting, together with the quantity produced.

Winter wheat.—Best acre, G. C. Pool, Kirtland, 45 4-60 bush.; 2d best, S. H. Addington, Marshall, 45 36-60 bushels; 3d best, John Thompson, Augusta, 44 26-60.

Spring wheat.—Best acre, Charles W. Eells, Westmoreland, 38 18-60 bushels; 2d best, Charles K. Eells, Kirkland, 29 4-60 bushels.

Barley.—Best acre, John Thompson, Augusta, 57 22-48 bush.; 2d best, Philo Norton, Vernon, 48 26-48 bushels.

Corn.—Best acre, George K. Eells, Kirkland, 87 17-58 bushels; 2d best, Pliment Mattoon, Vienna, 75 26-58 bushels.

Grass seed.—Best quarter acre, Philo Norton, Vernon; 2d best quarter acre, Pliment Mattoon, Vienna.

Buckwheat.—Best acre, C. W. Eells, Westmoreland, 31 17-48 bushels.

Winter fruit.—Best exhibition of winter table pears, J. C. Hastings, Kirkland; 2d best, H. R. Hart, Whitestown; 2d best, J. C. Hastings, Kirkland.

Winter pears.—Best dozen (Josephine), H. R. Hart, Whitestown.

Winter apples.—Best six varieties, Geo. Bristol, Kirkland; 2d best six varieties, H. R. Hart, Whitestown.

Officers for 1854.—President, Levi T. Marshall, of Vernon; Vice-presidents, Horace H. Eastman, of Marshall, Calvin Bishop, of Verona; Secretary, J. Wyman Jones, of Utica; Treasurer, Henry R. Hart, of Whitestown; Executive Committee, William Jackson, of Augusta, Harrison Lillibridge, of Annsville, Horatio N. Carey, of Marcy, Jonathan Talcott, of Rome, Chauncey C. Cook, of Kirkland, Frederick Smith, of Westmoreland, Daniel G. Dorrence, of Florence; James Merrimen, of Whitestown, Henry Rhodes, of Trenton, Lorenzo Rouse, of Marshall.

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The address of William Tracy, Esq., of Utica, was well received and highly commended, and doubtless may be considered worthy a place in the State Society's Transactions, and is hereunto appended.

L. T. MARSHALL, *Secretary.*

ADDRESS BY WILLIAM TRACY, ESQ.

Mr. President and Gentlemen:—In attempting to perform the duty with which I have been charged, I shall necessarily rely much upon your indulgence. I have no practical knowledge concerning the details of their profession, to narrate to men whose whole lives have been devoted to agricultural pursuits. And the avocations in which the whole period of my manhood have been spent, have not had a tendency to store my mind with the recorded learning of the science of husbandry. Yet, I bring to the task, a love for all that pertains to the culture of the earth, and, although, while I cannot hope to instruct those who hear me, with lessons of practical utility in their calling, I shall venture to call their attention to suggestions, which, though they may claim little of novelty, it may not be unprofitable occasionally to consider.

The cultivation of the earth, among every people removed from a state of barbarism, has ever been, and must continue ever to be, the employment of a large proportion of the population. Its pleasures were chaunted while the art of poesy was springing into being, and the bards of every age have re-echoed the most extravagant of the early songs in its praise. If we listened only to their pictures of rural life, we might suppose that the primeval sentence pronounced upon our common ancestor, had become converted into a continued round of delightful employments, and that the earth was no longer cursed for the sake of its fallen lord. We need not, however, such brilliant coloring in order to afford us a high estimate of the substantial excellencies and enjoyments of agricultural occupations. Like other employments, they have their trials, and anxieties, and disappointments; but, unlike many of them, they are furnished with their full proportion of hopes, and consolations, and encouragements, to compensate for them all.

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And there are few whose tendency is so direct, to lead us to adoration of the Creator, to faith in his kind protecting care, and cheerful submission to all the orderings of His providence, who "causeth his waters to come, whether for correction, or for his land, or for mercy." A most merciful law has doomed our whole race to lives of labor, and the time has never visited any people, when the journey of life had become a mere holiday excursion. Yet the whole history of mankind, as well as the teachings of Divine revelation, lead us confidently to expect, with the progressive developments of civilization, great advances, both in the average of human happiness and its diffusion among the various classes of the world's population. The great problem of civilization is not to select a favored few, and bestow wealth and the pleasures of art, and learning, and social elevation upon them, while the masses are left to be there mere beasts of burden, but to lay tributary every art and science, and gift of Providence, to the promotion of the happiness and the social advancement of the entire population of the globe. In the solution of this problem, the science and the arts of husbandry will perform most important services, intimately connected as they are with every other branch of human knowledge, and being the inheritance of seven-eights of our race. To illustrate their probable bearing upon the future, I have thought that it might not be unworthy of your attention to cast a glance at the early beginnings of agricultural art, and compare them with its present condition, and from the contrast to derive useful lessons for our guidance.

The discoveries and researches of modern science, have revealed to us many of the details of the condition of agriculture among the earliest of the civilized nations. Prior to these investigations, we knew in general, that in Egypt and among the Chaldeans, many of the processes which have been employed in succeeding ages in rendering the earth productive, were known and employed in the very dawn of history. But the long night which enveloped all their history and written records, shrouded from our knowledge the particulars of their agricultural operation. The light which has again beamed upon their monuments, has given us a distinct view of their husbandmen, as they prosecuted their daily labors

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three thousand years ago. We find them cultivating the same crops which are now produced there, and by the same process, and with the same implements which their descendants at the present day employ. The crooked stick, with which the most ancient pictures of Osiris is represented, is still the only plow employed by the children of Cush, and on the plains of the Tigris, and may be seen in Egypt, and Syria, and Chaldea, in daily use, with other as rude implements of husbandry, delineations of which may be found on monuments erected in the days of Abraham. Yet Egypt had her goddess of agriculture, her pastoral songs, and her sons honored the employments of husbandry to such a degree, as to die by the animals employed in the culture of the earth. The Chaldean, the Hebrew, the Phœnician, and the Carthagenian, all honored the call of the husbandman. A Carthagenian general found time amid his calls to arms, to give to his countrymen twenty-eight volumes upon agricultural pursuits, so instructive that they were translated by order of the Roman Senate for the instruction of the Roman people. The early Greeks not only honored the cultivator of the soil, but sought out processes to improve and elevate the art of husbandry. Hesiod, a thousand years before the advent of our Savior, has left a poem in which the whole subject of agriculture is treated of. He informs us that he kept his own flock, and cultivated his little farm at the foot of Mount Helicon, whose soil was "bad in winter, hard in summer, and never good." Yet, he could instruct his countrymen in the whole round of domestic economy, and sweetly sing in the same vein in which quaint old Izaak Walton wrote his pastoral—

"O the sweet contentment the husbandman doth find."

Nor was Hesiod alone in his estimate of the pleasures and dignity of an agricultural life. Homer, his cotemporary, represents Laertes divested of his royal state, happy in the culture of his little farm, and gives us a picture of royalty laboring with his reapers in the harvest field. Indeed, among all the nations of antiquity, who can lay any claim to be called civilized, husbandry was one of the most highly honored occupations. Nor were the early cultivators destitute of the science of agriculture. The capabilities and qualities of different soils, their improvement by

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admixtures and manures, the various methods of reducing them to a proper state of tilth, the care and treatment of particular crops, the theory and practice of irrigation, the breeding, care, and treatment of domestic animals, were topics well understood, and upon which the earliest writers gave specific directions. We also find in the treatises upon agriculture, very precise descriptions of the implements of husbandry in use in Greece nearly three thousand years since, with directions how to construct them. We have also descriptions of the tools and implements of the Roman cultivators, when they constituted the most dignified class of the citizens of the republic. Among them I may mention the plow. The Greek had improved upon that which the Egyptian cultivators used, and which is still used by his descendants, by fitting it with a mould-board, share and coulter, and in this state of perfection it was inherited from him by the Roman husbandman.

It is strange that an art which is the basis of all civilization, which had attained a very considerable degree of advancement among the nations of antiquity, should have ceased to make further progress through the many centuries which succeeded the age of the Roman commonwealth, prior to its revival in the northern countries of Europe. Yet the fact is most apparent, that for more than fifteen centuries, the art of cultivating the earth had made no advancement. The early knowledge of husbandry, it is true, had been carried to other lands than those where it originated. But it made no progress. The northern countries of Europe, as they emerged from barbarism, received all their notions of civilization from Rome, and with them their knowledge of agricultural processes, and thus the condition of agriculture in the days of the Roman commonwealth, with little improvement, became the condition of European agriculture for centuries. The various circumstances in which their different soils and climates placed the inhabitants of the different countries elevated by Roman civilization, compelled them to modify their processes, so as to adapt them to their several situations. But the means to produce a given effect on the management of the soil, the culture of a crop, or harvesting it, were the same which venerable antiquity had handed down to them. We can form some estimate of the extent to which this habit prevailed, by a glance at the agri-

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cultural implements which are still used in some parts of Europe, specimens of which we sometimes see brought to this country by immigrants. In many parts of Continental Europe, implements of husbandry are now in daily use, not at all improved in form from those which Hesiod described at a period cotemporary with the building of Solomon's Temple. Those who are curious upon such subjects, may find in the State library, at Albany, the Alsatian Cultivator, a treatise upon husbandry, published by the French government, only twelve years since, for distribution among the agricultural population of her Rhenish provinces. It contains, with a great deal of valuable learning upon the methods of cultivating and improving the soil, and rendering husbandry productive, descriptions and pictures of the tools and implements required by the farmer. One would, from an examination of them, suppose that the models had been obtained from the outfits of some of our most primitive looking German immigrants. The plow would have frightened no conservative Roman cultivator by reason of its novelty, and would attract more observation at our exhibition, than all the beautifully finished specimens which have commanded the admiration of our committees, and, I doubt not, would have aroused more mirthful feelings than does the ordinary annual reports of the committee upon swine at our State fairs. The same savor of venerable antiquity would attach to most of the other implements, of which pictures are given in the work.

The farmer of the seventeenth century was almost literally possessed of no agricultural knowledge, and hardly an implement or process which had not been known and used before the commencement of the Christian era. All his knowledge of tillage, of the admixture and manuring of his soils, of the succession of crops, of fallowing his lands, of irrigation, of the harvesting and securing his crops, and of the care and treatment of domestic animals might have been obtained from the pages of a multitude of writers whose words were familiar to the ear of the Greek and Roman husbandman. A great variety of causes to which I have no time to allude, tended to produce this result. The science and the art of husbandry remained stationary while the world was preparing for the wonderful changes in all the institutions of civilization

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which for the last two centuries have been rapidly taking place. But urged on by the advancement of civilization which commenced its rapid march in the seventeenth century, the attention of many observing and sagacious minds was directed to agricultural improvements. In England and France many treatises upon various departments of husbandry appeared about the middle of the century, and gave an impetus to the great work of agricultural advancement in those countries. Among them were works descriptive of agricultural processes in other countries which led to the introduction of crops not hitherto known. It may sound strange to many that at the commencement of the 17th century red clover was unknown in England, yet it owed its introduction there to the efforts of Sir Richard Weston, an agricultural writer, who had become acquainted with it in Belgium about the middle of the century. But the progress of agricultural improvements although fairly commenced in Europe at this period, was much retarded by the stormy condition of political affairs which continued until the peace of Aix La Chapelle about one hundred years later. From that period in many parts of Europe, and particularly in England, Holland and Belgium, the attention of agriculturists has been steadily directed to the improvement of all the departments of husbandry. My purpose is not to examine the particulars of this improvement. The limits of a volume would be demanded for its history. It is sufficient for my purpose simply to allude to the condition of the English agriculturists a hundred years ago. Compared with that of the continental husbandman, it was in every respect quite as desirable, and as well furnished with the comforts and conveniences which contribute to the happiness of individual and social life, and with quite as ample facilities for moral and intellectual improvement. In many parts of England a first class farmer, was then profoundly ignorant of the taste of wheaten bread. A single bushel of wheat meal, to be made into Christmas cakes and pies, was in multitudes of instances, the entire annual consumption of wheat in his family. Tea, coffee and sugar were luxuries scarcely known to him, and when indulged in, used most sparingly, and only upon extraordinary occasions.

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Much of his wearing apparel was made of tanned or untanned skins, and his leathern doublet and hose, after being a little time worn among storms and sunshine, and begrimmed with the various employments and the grease and smoke of his fireside, exhibited a striking contrast to the comfortable clothing which the improvements in manufactures now place within the means of the humblest cultivator. His homestead with its earthen floors and its clumsy furniture, were in keeping with his dress and his food. Indeed in the days so often lauded of "good old merry England," her merry men needed a good deal of mirth and jollity to compensate them for the physical discomforts to which they were heirs. The system of husbandry which then prevailed was rude compared with that which has converted England into a garden, and greatly multiplied its productive powers. The sciences of botany and chemistry were in their infancy; mineralogy and geology were not yet born, and the light which all of them have thrown upon agricultural science, had not yet beamed upon it. Mechanical invention had not yet commenced its career of advancement to furnish aids to human labor in the countless millions of slaves which require neither food nor clothing, and who feel no miseries over which the most sympathizing heart can bleed. The mission of the steam engine, the spinning jenny and the power loom had not yet opened upon the world. The connecting of each part of every country with every other part by means of canals and railroads, and of each country with every other by vessels made to disregard all ancient difficulties of navigation had not been dreamed of. No Watts, nor Fulton, nor Franklin, nor Morse had yet astounded the world with their discoveries. Territorial distance was still a naked reality, and all early notions of miles and leagues and days journeys had not yet been annihilated by the iron road and the iron horse, and the more wonderful electric telegraph. An improved process in agriculture discovered by some wise or enthusiastic experimenter, was not at the instant of its success proclaimed throughout the length and breadth of the civilized world by the aid of their agency and of an ubiquitous daily press. The march of agriculture as of every other improvement, was of necessity slower than would suit our notions in the

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middle of the nineteenth century; but it had commenced its course, and from that period to the present, it has made continual and substantial advances until it has already greatly exceeded the expectations of its most sanguine lovers. The improvements in every department of the useful arts, have aided it forward and helped to perfect it. The discoveries in every branch of science have also been made tributary to it, and not the least those which have apparently the least connection with it. The advances in astronomical knowledge in connection with discoveries in the laws of meteorology and of wind and water, can and have effected improvements in navigation which have, in a most wonderful manner, increased the intercourse between distant lands, and sent myriads of travellers from each to each, to discover and proclaim to the world everything that is novel to them. Agricultural experience is thus imparted from land to land, while the valuable productions of every country are exchanged and their culture introduced wherever the soil and climate render it profitable. In addition to this indirect advantage which husbandry has derived from the improvement in other arts and sciences, new sciences have sprung into existence to become its direct tributaries, and the learning which was accustomed to a confinement in the study or the laboratory, has been popularized and sown broad cast among all classes of the cultivators of the earth, to an extent that even at the commencement of the present century would have seemed incredible. We can imagine the astonishment which would have been depicted upon the countenance of Sir Humphrey Davy, or of our own Silliman, who has but just laid aside his professional harness to enjoy the pleasures of a green old age, had they been told in 1800 that an edition of hundreds of thousands of copies of such a work as Liebig's and Johnston's Chemistry should before the middle of the century, be sold in our own country; that it should be found in the dwellings of the humblest cultivators through the length and breadth of our land, from the Gulf of Mexico to the St. Lawrence, and far back thousands of miles westward of the smoke of the then farthest backwoodsman's cabin, and not only that they were there, but that they were read and understood, and their doctrines were reduced to practical utilities by millions of our countrymen.

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But to return to our subject. If we look at the husbandry of the British islands at the present day as it is shown to us by the reports of our countrymen who have visited them, to acquire a knowledge of their agricultural condition, we shall find that the last hundred years have effected an entire change in it. The processes by which the various operations of the farm are carried on, the methods employed to draw from the soil its most valuable products, to prevent its exhaustion, and to increase its productive powers, the economical application of human labor in its culture, and in short the entire practice of agriculture, are now pursued in accordance with well understood and fixed rules, the result of scientific discovery and mechanical invention. The cumbrous and unwieldy implements with which the cultivator performed his daily toil in ancient times, have given place to well formed, ingeniously contrived and well adapted substitutes. Instead of the clumsy, ill constructed plow, but a single step removed from its Roman model, modern science now determines the form best adapted to perform its office, and modern ingenuity constructs it at a diminished cost. Instead of the imperfect and expensive methods by which the productions of the farm were carried to market, the spirit of modern improvement has by means of improved roads and railways brought the farm of every producer in the kingdom to the suburbs of its metropolis. The farmer in the north of England, who a hundred years ago should have thought of sending his fresh butter, and fatted calves and green vegetables by land to London market, would have been deemed a fit tenant for a mad house. It is now carried there with less labor and expense and in less time than it would then have required to carry it twenty miles to his market town In addition to this result, the value of which every one can estimate, the employment of new mechanical forces in all kindred arts, has most wonderfully reduced the amount of human labor necessary for the production of such articles of use and luxury as are required by the laborer, and the result is, that the homesteads and fields of England are almost as far removed from those of a century since as those were from the wigwams and wastes of their barbarian ancestors when Cæsar invaded their shores.

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In our own land the spirit of agricultural improvement has made equally striking achievments, notwithstanding the inferiority of our present practice of husbandry as compared with that of the British islands. Without going back a hundred years, it is enough for us to recall the condition of American agriculture at the commencement of this century to excite the warmest gratitude in our breasts for what has been already done and the highest hopes for the future.

At that era, with the Mississippi for our western boundary on the north, and while Louisiana and the Floridas were provinces of an European state, on the south, and the fairest portion of our present union, unbroken wildernesses or lonely prairies, the attention of but few of our citizens had been attracted to the improved agricultural process which had been steadily progressing in England for fifty years. Our intercourse with Europe was far less frequent or intimate than it has since become. Few Americans visited it except for commercial purposes, and the emigration of European agriculturists of intelligence and skill, with sufficient means to employ them, was extremely limited. In addition to this, few of our agriculturists were men of wealth. Our richest and most fertile soils had been hardly entered upon; and even in our own State, if we except the valleys of the Hudson and Mohawk, the wilderness had bardly begun to shrink before the axe of the pioneer. A well organized agricultural society was unknown on the American continent. Our agricultural tools and implements were essentially the same which our pilgrim fathers brought with them when they emigrated hither, the improved processes which had obtained in English husbandry, were rarely followed here, partly because the richness of our virgin soil had not been exhausted, and the necessity of keeping it in good condition and improving its productive powers was not so pressing, and partly because the abundance of unoccupied lands obtainable at a mere nominal price, rendered it less expensive to purchase a new farm than to renovate an exhausted one. When the cost of carefully underdraining an acre, in order to render it twice as productive as it was before, is greater than the price of fourfold or tenfold the number of acres of virgin soil, it is difficult to persuade the cultivator that it would be better for him to

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make the expenditure in draining, and thus double his crop, than to lay out the same money for land enough to fourfold or tenfold it. The example of agricultural advancement, however, was destined to be followed by the American farmers. The rapid development of our resources, and the increase of individual wealth and its general diffusion, with the restless spirit of improvement which has ever characterised our countrymen, aided by the march of mechanical invention and the advancement and diffusion of scientific knowledge, soon impelled forward the work of agricultural progress. Its early beginnings were retarded by the circumstances to which I have alluded, but when it fairly commenced its career, it made no backward movement, and it has gone forward with increasing energy and power, and made new conquests at every step of its course.

I see among my auditory, members who attended the first agricultural exhibition held in this county, at Whitesboro', in the fall of 1819. They will well remember a long blue plow, which, with its simple minded plowman, who had been imported from the north banks of the Tweed, attracted the universal attention of the farmers. It was such a long, and such a singular plow, that most ancient plowmen had no more faith in it, than many of the ancient and time honored fathers of another profession have now in codes and modern legislation. It was one of two iron plows then on exhibition, and the novelty of an iron plow and one of a form so different from those with which our farmers were familiar, was not the topic of conversation of a single day. Many a sagacious farmer doubted in relation to its qualities; but that plow, with slight modifications, has become substantially the model for all the plows with which all our farmers are supplied.

And unless I am mistaken, the wooden plow then used, with its wooden mold board and wrought iron share, would be regarded by every plow boy who hears me, with almost the same curiosity with which he would gaze upon one of the aboriginal inhabitants of our goodly country, arrayed in his war dress and plumes, and painted for the fight. In that day, well remembered by many who spurn the idea of being called old men or women, our agricultural exhibitions were stocked with no improved horse

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powers, thrashing machines, reapers, horse rakes, straw cutters, butter workers, portable curd boilers, and the multitude of other ingeniously contrived machines for facilitating and relieving the labors of the farm which now meet our eye at every step. Ponto and Towser had not been drilled to become the adjuncts of the dairy maid, and compelled to earn their daily bread by the sweat of their brows, in relieving her of her labor in separating the butter from the milk. The days of farmer's dogs were still glorious ones; all fun, and tumble, and frolic, with abundance of leisure and time for enjoyment.

The discussion of sub-soil plowing, and under-drains, and rotation of crops, and specific manures and compensating returns to the soil, had not commenced. The improvement of the breeds of domestic animals had but just attracted the attention of farmers, but it had not overcome the prejudice which many a sagacious but over prudent breeder entertained against all novelties in agriculture, which, under the appellation of "book farming," was regarded by him as among the humbugs of the day. Indeed it is difficult to conceive the feeling with which many successful farmers then looked upon the efforts of those who were endeavoring to diffuse agricultural information and promote the advancement of their favorite art. Every thing that was novel was chimerical, and the Mohawk negro slave, who in the depth of despair, exclaimed--"we are all ruined now, and master will certainly go to jail, for he has come home from Albany with a new farming book"—was not alone in his philosophy. They did not remember that agricultural books are but the result of agricultural experience, and the results of reflections based upon it. They never disdained to learn another man's experience in the care or culture of his crops, when it was told to them by word of mouth, nor to act upon it. It was only when the information was written out and printed in a book, that it became alarming. There is less of this feeling now.

Notwithstanding these prejudices, the enterprise, however, went forward, and in the third of a century which has succeeded the time to which I have last alluded, less than half the allotted limit of human life, it has attained a maturity and condition which

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is most gratifying to every lover of his country and of humanity, and which promises at no very distant period, to convert the broad land we inhabit, into the garden of the world.

The present condition of agriculture here, and the elements of improvement it possesses, afford some of the most gratifying assurances we have of the future advancement of civilization, and the increase and diffusion of human happiness. The facilities for intercommunication between distant portions of the world, afforded by the steam engine and improvements in navigation which are constantly bringing into more intimate acquaintance and intercourse, every people; the railroad which is practically bringing every part of our country into immediate contact with every other; the telegraph, which with the daily press, is bringing the minds and thoughts of our whole population into constant and familiar converse, as if we were all in one vast assembly, and gifted with universal language; the rapid progress of scientific discovery, and the restless genius of mechanical invention, and above all the general diffusion of popular education, creating an universal thirst for daily supplies of intellectual food to be supplied by our teeming press, afford a certain guaranty, that the longing for advancement which is an instinct of our race, and in no people more strikingly developed than in our own, must lead to results more signal than any which have hitherto been achieved in the arts of husbandry; and every one of them will be an addition to the common stock of means for human happiness. Seven-eighths of our population are engaged in agricultural pursuits. Commerce, the mechanical arts, and the so called learned professions, engross but the other eighth. Each of these, seven-eighths of the entire population, has a direct interest in everything which can lighten the toil and improve the condition of the cultivator. He is deemed a benefactor to the race who by an improved process teaches us to cause two blades of grass to grow where one grew before. Equally so is he who by an invention of a machine or discovery of a truth shows us how to make one hour of human labor perform what two have been required to do. Each has emancipated a portion of toil hitherto expended in producing a result attained, and has furnished us the time it required for some other employment to increase our means of physical enjoyment,

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or mental, or moral culture. Thus he who gave the farmer a horse rake, by which the labor of ten rakers was saved, gave the whole race of husbandmen the additional time the ten men would have been employed in raking; he who furnishes him a hydraulic ram to supply his house and stables with water from the brook, gives him the time which it previously required to draw water; he who instructs him how by draining his fields to compel them, to produce with an equal amount of labor, twice their former crop, gives to him, not only the time formerly required for labor to produce the increased return, but the rent of the land it would have required to raise it. He who opens a road to market by which one-half the labor of transporting his crop is saved, has given him an equivalent to the additional time which all the labor of himself and his team formerly required in its carriage. I might continue to enumerate the various ways in which each improvement in husbandry, or in the aids of husbandry, gives to the whole agricultural population relief from toil, and time for increased physical enjoyment and improvement of its social condition. The rule is an invariable one, and experience as well as theory, abundantly demonstrates its truth.

I might appeal to those who have observed the advantages of our plank roads and canals, to the farmers of this county for its truth. Many who hear me have at no distant period known the inconvenience and expense of transporting butter, and cheese, and grain, from a distance of from fifteen to thirty miles to the central lines of communication for a market, when two or three days severe labor with a man and team was at the appropriate season for the work, required to draw a load of seven or eight hundred pounds, and have, since the introduction of plank roads, drawn loads of four times the weight over the same ground, with the labor of a single man and team. Thus, one day's service performs what required from eight to twelve, and the whole surplus so saved, is added to his wealth. In other words, every pound weight of his annual produce is increased in value, by the saving in expense in transporting to market, and the amount so saved, forms the annual interest or income of an addition to the value of his farm, equal to the sum required to produce such an interest.

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In view, then, of all the facilities for agricultural advancement with which our country abounds, do I err in predicting for it a rapidity of improvement, and a condition of perfection of which we have as yet seen no parallel? And that such improvement shall be accompanied with an equal advancement in the physical, intellectual, and social condition of our agricultural population? Let us consider for a moment what is, so far as relates to this life, the great end for which we live. Is it not the attainment of a condition of rational happiness? It is to accomplish this instinct of our nature, that we so ardently pursue our callings. It is not simply the adding of field to field, nor the accumulations in barns or storehouses, that can gratify it. He who toils merely to enlarge his boundaries, or to swell an inventory for his executors to foot up, and whose whole energies have been, if I may so speak, prostituted to this end, has bartered away his toils, and achieved no compensation for them, but the scars he has received in the ignoble pursuit. His wealth has furnished him no rational happiness, and in too many instances it will neither secure the happiness of those to whom it may descend, nor render them so well fitted for the journey of life as the heirs to the humbler but more valuable inheritance of a well educated mind without earthly possessions. It is well for us to bear this in mind, that the trials and privations which the farmer, and his wife and family frequently endure, simply that his lands may be enlarged, his barns be better filled, and his name upon the assessment roll be followed by a large figure, are no merit of themselves. It is well to live within our means, and a duty to avoid the embarrassments of debt, and to make a reasonable provision for our comfort in the decline of life; but while we have these things in view, it is our duty to render our homes and the lives of those who are dependent upon us, as happy as it is within our power to do it, and to remember that if our homes be not happy ones to ourselves and our families, the increase of acres, and barns, and money at interest will not afford us happiness. The farmer's homestead is the place where his life is to be spent; where his wife is to find her chief source of happiness; where the best years of his children are to be spent; where his chiefest earthly delights are to be sought; and where, in the evening of his days, his pathway t

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the grave is to be smoothed by the affectionate hands of those he has nurtured for the school of life. It is more important that it be well adapted to the convenience and comfort of his family, than that his title deeds cover a few acres more or less; that it be neat and tasteful in its exterior and its appointments, and attractive to those who are to spend their early years in it, than that he has a few more or less dollars at interest; that it be provided with intellectual food to render it a theatre for mental and social improvement to its occupants, than that his income be a little greater or less. Indeed, so far as mere economy is concerned, a neat and agreeable homestead, with a pleasent door-yard and tasteful garden, is rarely an extravagance to a judicious farmer of very limited means.

As a means of protecting his children from temptations to coarseness of behavior and to vicious indulgence, there is no such safeguard as an attractive and well regulated home, with books and pleasent means of amusement and recreation. And the inheritance of a proper training in such a home, is an inheritance to children a thousand times more valuable than thousands of acres with untold securities for moneys loaned.

Let the farmer's home be an agreeable one, furnished with all the comforts and conveniences which his circumstances will warrant. Let him be careful to promote the social interests and general welfare of his neighborhood. Let him see that his district school and church, and all other accessible means for intellectual improvement and religious culture of his and his neighbor's household, be well looked to and cared for, and that those of whom God has given him the oversight and the nurture, or the power to influence by his position in society, be trained to virtue and usefulness, and he will find that he has all the while been unconsciously achieving happiness for himself, while he has furnished his children an inheritance which will render it of little consequence to them, whether they have any other legacy.

Do I err, then, Mr. President and gentlemen; do I err, my countrywomen, when I draw the lesson for the farmer, that with the rapid march of agricultural advancement, he should rather seek to devote the time which by its means will be emancipated

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from his accustomed labors to the enlargement of his own and his family's means of intellectual, social and religious improvement and advancement, and thus promote their true and rational happiness and the general welfare, rather than make it subservient to the mere insanity of adding acres to acres, and item to item, in the inventory which he may leave to his executors. One course is the path of true philosophy. It leads through happiness to happiness. The other through restless anxieties and unsatisfied desires, leads only to the grave!

ONONDAGA.

The society is in a very flourishing condition. The executive committee prepared a premium list early in the season, amounting to more than one thousand dollars; and the necessary viewing committees were appointed.

The prejudice which once existed against this and kindred associations, is rapidly giving place to the charitable opinion that an occasional mistake may be unavoidable, and that the design of the society is not to reward favorites and certain cliques, but to render "equal and exact justice to all."

Although the ardor of the exhibitors was somewhat dampened by the steady two days' rain, yet the exhibition at Wieting Hall was fully equal to that of last year, and under the circumstances, was of unprecedented brilliancy. The final day, the address of Mr. Delafield, was received by an appreciating audience, with marked interest and approbation.

A resolution tendering the thanks of the society to the speaker, and soliciting a copy of his address for publication, received a unanimous and hearty approval; after which the reports of the judges were read, and the society adjourned till the winter meeting.

REPORT ON FARMS.

Your committee who were appointed to view the farms offered for premiums, in making their report, will take the opportunity

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to say, before proceeding to detail the particulars of their examination, that the competition for premiums in this department, is quite limited, there being only four farms offered. And further, that in our examinations, no new principles or practice in agriculture have been developed. But in their general observations they are happy to discover that there is a spirit of inquiry abroad, and a disposition to make use of the known improvements in the manner of cultivating the soil, and make available the use of labor-saving machines and improved tools.

They proceeded to the performance of the duties assigned them, on the 28th July, and examined the farm of Messrs. Bennett, in the town of Camillus, lying upon the plank road, eleven miles from Syracuse, containing four hundred and fifty-six acres. Here your committee found a specimen of very successful farming, on a somewhat large scale. These gentlemen have pursued their calling with a good deal of energy. Occupying a naturally fertile soil, they have aimed to cause it to bring forth abundantly, endeavoring at the same time to increase its ability to produce sustenance for man and beast. This farm was found in a high state of cultivation, undergoing a rotation of crops in such succession as that, in their opinion, each shall in some measure prepare the way for that which is to follow, and secure favorable results for all. They make use of clover, well dressed with plaster, for fertilizing—and the fields so used are not pastured so close as to preclude the possibility of any return to the soil in the form of a decayed vegetable. They are allowed to remain two, and sometimes three or more years; are then planted with corn; that followed with barley or oats, the stubble of which is usually plowed twice and sowed with wheat, and seeded with clover and timothy. The amount of land appropriated to each of the several crops above named, the present year, was—to wheat, sixty acres; barley, fifty; corn, sixty; oats, seventeen; mowing, eighty; twenty-five of which is to be mowed again for the seed. They have a clover mill and a thrashing machine; have, also, for putting in grain, a drill and a broad-cast sower.

An inquiry very naturally arises—how much help is required to carry on this amount of business? They hire five men steadily

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by the month, and two more in the season of haying and harvest; and require five or six teams of horses.

They are not giving any particular attention to raising or breeding of stock, and only keeping so much as to make good use of the pastures and corn stalks, having, in all, at the present, one hundred and ten head.

By way of improvement in buildings, fences and fixtures, a beginning has been made. One barn, underwalled, and well made, designed mainly for grain. One piece of wall fence, well made.

Another improvement is noticed particularly—that is the supplying the farm with water, by means of a hydraulic duct. The water is forced by hydraulic rams over a rise of one hundred feet, and conveyed one and a half mile through lead pipe, at an outlay of about five hundred dollars.

In competition with this farm, as coming in the first class, is the farm of Reuben Butts, of Manlius, lying one and a quarter miles south of Manlius Village, containing one hundred and fifty-seven acres, one hundred and twenty of which is under improvement. The soil is well adapted to the raising of grain. Mr. Butts' mode of cultivation and system of rotation of crops is very similar to that practiced by Messrs. Bennett, viz: corn upon the clover ley, to which the manure from the yard is applied, then sowed with barley or oats the succeeding spring, and followed with wheat, with but one plowing. Good attention has been given to fencing, fences made of rails and sand stone wall. The dwelling has been remodeled, and presents a very comely appearance. The outbuildings, although not such as would be taken for a model, are constructed with an eye to convenience, but more particularly to the comfort of stock, there being plenty of stable and shed room. The grain barn very conveniently arranged for thrashing the grain Mr. Butts has his own thrashing machine.

Of the stock, it seems hardly worth while to speak, as Mr. Butts' horses and cattle are so well known to the farmers who take much interest in our county fairs—suffice it to say, they looked very fine at *home*, are well supplied with rich pasture and

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plenty of good water, for this farm is also watered by means of a hydraulic duct, which, although it has nothing peculiar in construction, is worthy of notice, as an inducement to others to be at some expense in outlay, as this has been in use twenty-five years, and has needed no repairs. The water is conveyed one hundred and ninety rods in lead pipe. Mr. Butts has a flock of merino sheep, numbering eighty—sixty-eight of which were sheared last spring, yielding an average of four and a half pounds per head.

Mr. Butts has given some attention to fruit, having an apple orchard of about four acres, one-half of which has been grafted upon old trees, and has thus obtained very good fruit; has, also, a yard of fruit of different varieties. The tools were found in order, and in their proper places.

To institute a comparison between these two farms, the primitive condition of the soil may be considered not very dissimilar, the mode of cultivating and fertilizing both good, and very much alike. In the arrangement of grounds and yards around the dwelling, in the attention to fruit, in the care of fences, and freedom from noxious weeds, Mr. Butts so much excels, as in the judgment of the committee, to entitle him to the premium of $12.00.

Of the farms containing less than one hundred acres, the committee visited first one belonging to G. N. Sherwood, of Camillus, ten miles from Syracuse, containing fifty-eight acres, occupied and presented for premium by Henry Franchier, who pays a yearly rent of $300.

This farm was purchased, but a few years since, by Mr. Sherwood, and was in a very bad condition, though naturally a good soil—quite a portion of it was covered with quack grass which, under Mr. Franchier's management, has been very much subdued. The arrangement and construction of buildings and fences, are comparatively new—the fence being mostly made of posts and boards, and kept free from weeds, give to the farm a very tidy appearance. In constructing the out-buildings (the arrangement

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of which has devolved upon Mr. Franchier,) very good advantage has been taken of the shape of the ground, and although erected at different times, are so united as to render them very convenient. A good commencement has been made for a supply of fruit for family use.

Here was found a specimen of what may be termed very close farming, endeavoring to make the land produce to its utmost capacity. The rotation of crops is pursued different from those before spoken of, in that the clover ley or pasture is allowed to remain but one year, and is then planted with corn, followed with other spring crops and winter wheat, is heavily seeded with clover, which is plowed in the next season, and then surface tilled with a wheel cultivator for wheat.

Mr. Fanchier gives it as his opinion that he can thus maintain and even increase the fertility of the soil. Uses plaster freely upon the clover, applies ashes and plaster to the corn as soon as it is up. Tills corn with a cultivator and sows wheat with a drill.

That the pastures produced well was shown by the fact that six horses and five head of horn cattle had been kept in a field of eight acres and were all looking fine. This shows that Mr. Franchier takes pleasure in doing things well, and is making good use of the practical experience he has had in farming, and surely is setting an example worthy of imitation.

The other farm offered for premium is that owned by Mr. Edmund D. Cobb, of DeWitt, four miles from Syracuse, containing 97 acres. Here again is another of nature's productions in a soil well adapted to the raising of grain or grass, with no serious obstacles to encounter, only requiring good use to be made of good opportunities, which Mr. Cobb has not been slow to improve. Pursuing that rotation of crops, which seems to have become a very uniform practice among the farmers of our county in the grain growing district, viz: seeding heavily with clover, using plaster freely upon it; when broken up, to plant to corn, then to sow some other of the spring crops, and follow with wheat and seed with

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clover. Mr. Cobb is in the practice of deep and thorough tilling, but has for two or three years applied all the manure made in the yard, to the grounds appropriate to the raising of tobacco. He has the present year about 3½ acres. The ground is to be cleared of tobacco and sown to wheat this fall. Mr. Cobb thinks he gets as good wheat after tobacco as he can upon a summer fallow: the stubble where the wheat was after the last crop of tobacco, and the wheat shown to the committee in the bundle would seem to justify the opinion. He has given some attention to raising the improved breed of stock, and has a flock of sheep of a grade designed for mutton, numbering 48, thirty of which he sheared; the average weight of wool per head was a trifle over 6 lbs., sold at 40 cents per pound.

The general appearance of this farm shows that head and hands have been employed in its management. It is among the old farms. Some of the fences have been standing for years, and are still kept erect and free from the unsightly appearance of weeds and briars, and have that tidy aspect which on some farms pertains only to the new fences.

The buildings were in complete order. The grain barn, which was well filled, had its doors, hinges and fastenings all in order. The carriage house and horse barn, united, are new, and while there seemed no effort at display, durability and convenience are well combined. In one corner of the basement of this building an ice house has been constructed. The corn house and hog pen, with the apparatus for cooking food for hogs, and finally for slaughtering them, need only to be seen to fully recommend them.

The dwelling house is of the style which prevailed in the days of its erection, and presents a good appearance, surrounded with forest and fruit trees. Among the latter were noticed several pear trees well laden with fruit. There are also peach, cherry and plum trees, and apples of about thirty varieties. The garden for family use presented a very fine appearance. Finally everything in such good condition as fully to entitle Mr. Cobb to the premium of $12 for the best farm of less than 100 acres.

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While your committee were in Camillus, for the purpose of viewing the farms before mentioned in that town, they were invited by Mr. Martin W. Lyon, to call at his farm, not that he wished to present it for a premium, but feeling deeply interested in his occupation, and endeavoring to improve his farm, would like to have them see what he was doing. Accordingly they availed themselves of his invitation and called the next day. They found that Mr. Lyon was evidently making improvement by way of removing stones from the surface, thus enabling him to till more effectually, at less expense, and secure better crops. The general appearance of the farm shows an attention to business. They found Mr. Lyon anxious to obtain information as to the best mode of cultivating and the best method of fertilizing the soil, manifesting a spirit of inquiry and application which, if followed out for a short time, will place his farm among the best in the district.

Dated, Syracuse, Sept. 13, 1853.

Signed, SMITH OSTROM,
RALZAMON CURTISS,
H. P. BOGARDUS.

NEW-YORK STATE AGRICULTURAL COLLEGE.

It was the hope and intention of the committee of arrangements to induce an evening discussion, setting forth, among other matters, the importance and progress of the long wished for agricultural college. The severity of the weather, during the first two days of the fair, frustrated this hope; and though far short of their desires, they have been able to collect the views and action of the State for the last ten years, and the results, thus far, successfully accomplished.

As the object has long been dear to the farmers of Onondaga, it is not doubted that the following sketch will be very acceptable as a portion of the proceedings.

The facts herein stated, indicating an early opening of the college halls to the youth of our State, will carry additional interest into the domestic circle of every family, whose interests are connected with the soil of our State.

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In the year 1842, a paper was addressed to the State Agricultural Society, pressing upon its members the importance of agricultural education, and the establishment of schools or colleges, where knowledge could be obtained, without exposure to the endless temptations and seduction of cities and large villages; and where exercise, health, and strength of constitution, might be secured.

The subject was often discussed about that period, and was finally referred to John Greig, Esq., of Canandaigua, a gentleman who had ever shown a liberal feeling for the agricultural interest, and, with others, had hoped to introduce the study of agriculture into our common schools. With this view, Mr. Greig and the gentlemen associated with him, reported favorably, (1845) on the introduction of agricultural books into the common school libraries, and the offer of premiums for prize essays. The condition of the youth of this State, and the want of teachers for the elementary departments of education, seemed unpropitious to the system; and it ceased in a measure to occupy attention, save only the preparation of essays on agricultural subjects, for which the State Society then gave, and continues now, annually, to offer premiums.

When Colonel Sherwood, of Cayuga, was at the head of the State Society, (1846) he declared his earnest hope that the day was not far distant, when agricultural science would be taught in our schools, academies, and colleges; that the farmer's education is incomplete without a perfect acquaintance with all the details of agricultural science.

It was admitted at that time, that farming was "a system of imitation;" that though good plowing was necessary, calculation or knowledge was more necessary; for oftentimes the land appeared in good condition, yet the crops were poor; often the land appeared all wrong to the practical eye, yet good crops were obtained from it; none could tell the why or the wherefore; knowledge of cause and effect was wanting; and it seemed clear that the longest life of practice will not give this necessary knowledge. Facts piled on facts—reasons derived from examinations of ele-

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ments and principles—can alone teach us how to practice with advantage.

It was about this period of 1846, that several persons residing in the city of New-York and its vicinity, endeavored to persuade the Legislature to endow an agricultural college, and to locate it near that great metropolis. The project did not find favor. The idea of an agricultural college near to any city or large village, was discarded; it could be maintained, only in connexion with a central or western location; it is there only, said they, that agriculture, in all its leading branches, assumes its proper importance.

In the Legislature of 1846, it was recognised as a settled principle of the State, that in the distribution of its funds, their benefits should go to the many rather than the few; and never to grant its aid, until the parties to be benefited have previously called the desired object into existence, and with means for its establishment. It was admitted that it would be right and well to encourage agricultural knowledge in our academies, because there, the rudiments of agriculture may be *first* taught; there, lads of ten or twelve years of age might, with great profit, learn the properties of things—the forms of matter—and to distinguish between essentials and accidentals. This duty, or course of education, is alike essential to *all* men, whether farmers, mechanics, merchants, or professional men. It is the door-way leading from our common schools and academies, into the halls of our colleges.

During the year 1848, the agricultural interests of this State were guided by Lewis F. Allen, Esq., who presented to the Legislature, at their solicitation, his address before the society, when he retired from the presidential chair. It is one among many masterly expositions of the inertness of farmers; their omission to demand and hold their proper position in the great social relations of the world. It aroused attention to the vast benefits to be derived from agricultural education; to the acquisition of capital; the abundant returns for its use; the pure enjoyments which accompany its pursuits.

Under the presidency of the Honorable John. A. King, the influences of the State society were earnestly directed to promote

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agricultural education, and during the year 1849, a valuable report was presented to the Legislature, in which was embodied the outlines of a plan for instruction. This able document was sanctioned by the names of P. Crispel, jun., Noble S. Elderkin, J. Slocum, Hector C. Tuthill, and H. Kidd, and suggested the appointment, by the Governor, of a board of commissioners, to mature a plan for an agricultural college and experimental farm, to be submitted by the Governor to the Legislature at its next session. Commissioners were appointed, and Governor Fish evinced a strong desire to promote the oft repeated desire of the farmer; the favorable report of tho House committee, with the declarations of legislators, indicated a favorable result and issue; but no action was had on the bill, a result followed by loud disappointment.

In 1850, E. P. Prentice, Esq., filled the presidential chair of the State society: a gentleman of sound judgment and discretion, and one who, like his predecessors, was thoroughly convinced of the importance of agricultural education, and who never permitted a proper opportunity to escape, for promoting this national blessing. The Legislature however omitted all action.

In the year following, (1851,) the farmers of the State placed Mr. John Delafield, of Seneca, in the president's chair; when, upon assuming it, he at once made agricultural education the prominent feature of his opening address. He declared truly, and repeated it emphatically, that "the cultivation of the soil is *the foundation of all public prosperity*," requiring therefore the highest and first claim to the fostering care of the government. He pressed upon the large assemblage of farmers, legislators and citizens who listened to him, the wide spread influences of the farming community, which far exceeded in wealth and numbers, the aggregate of *all other classes* combined; he pointed out the reluctance which farmers always feel, to press themselves into notice, or to claim participation in benefits so often sought, and conferred upon other classes of men.

This year, (1851,) was marked by a near approach to a consumation of the farmers' wishes, and though the bill for the establishment of a school or college met with general approbation, it was lost for the want of a *single vote*.

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As in his opening, so in his closing address, Mr. Delafield maintained his course steadfastly; he exhibited cogent reasons for a college devoted to the farmer's use; for an institution where the general economy of farming should be made plain and intelligible to every farmer's son. It was made evident that the plan before proposed, of *many local schools*, was objectionable, because they would lead to a contrariety of results, and to the promulgation of as many diverse theories; also because, from inadequate means, and want of educated teachers, experiments would too often be inadvertently made. The completeness of results in a perfected State institution, would prevent the diffusion of error, and ultimately become the parent of smaller institutions, fostered and guided by its light.

Placed near the center of the State, its influences are to be felt in every county and town. Useful knowledge will be diffused with practical results. Theories will be examined and tested, adopted or discarded. The individuals from the counties of this State and elsewhere, instructed at this establishment, will carry to their homes a vast amount of information, to impart it to their fellow men.

The presidency of Henry Wager, Esq., succeeded that of the Seneca farmer. Mr. Wager with a zeal equal in warmth to any of his predecessors, urged forward this great object, but his health prevented that continuous personal attention which his inclination prompted. Mindful of the good cause, he placed it before his agricultural compeers, and with them, urged his immediate preceding officer (Mr. Delafield) to continue and increase his exertions. The result is now before the people; it is a charter of the New-York State Agricultural College, abundant in all its parts, with all needful privileges for education. It has already produced a plan and system for government and instruction, digested and arranged by the trustees, well prepared to lead and direct the mind to all knowledge useful to us as farmers; and in addition they have provided extensive means for the application of knowledge to the *practical uses* of implements and tools, and to *the management* of soils for the production of vegetable matter in

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greatest quantity, best quality and at the least cost. A plan admirably calculated to draw out all facts connected with agriculture.

This plan and system is now ready for action, to vindicate the sincerity of those who have so often and so loudly proclaimed at our annual meetings a demand for agricultural education, and who have from time to time put their names to petitions, enforcing their views in unmistakeable terms.

Having before you the objects asked for, it remains with us farmers to give it our countenance, to give it life-blood, and to prove to our Legislature and to the world, that, as a class, we possess the desire, and will exercise liberal acts to originate and warm into existence, a valuable and long required institution. We are in a position now to claim what has been recognised as a settled principle of State policy—its aid to worthy objects called into existence by public feeling, with means for its establishment—an object for the advancement and benefit of the many, and, in this instance, especially applicable for the benefit of the whole population, because the productive cultivation of the soil *is the foundation of all public prosperity.*

It is stated that the present limited amount of subscription to the college, say $40,000 has been taken to near one half the required sum, to open its doors to all who seek for knowledge; it is also stated that the farmers of one county have taken in single shares, the sum of $8,000. We deem it sufficient to place the subject before the farmers of Onondaga, to secure their full share of regard and aid, for an institution which they have so strongly prayed for.

When the subscription is filled, the farmers of New-York will look with confidence for State endowment, whereby to lessen the cost of instruction, and to place this college on a level with other colleges of our State.

All our best endowed colleges have been brought into existence by individual effort and enterprise: this has given to them their first impulse and foundation: has encouraged and strengthened

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them, until the State, witnessing their zeal and sincerity, extended its fostering aid. So in this case individual association began the work, and has now reared it into form and substance; it has raised up a great light, around which we may fondly hope others, many others, may revolve, receiving and shedding knowledge to the extremes of our wide spread country.*

The county of Onondaga has long been urgent for the establishment of this practical system of education for the farmer and the agriculturist of Onondaga. Rejoicing in all good and beneficent works, the officers of the county society feel warranted in congratulating their brother farmers of each and every county, upon the prospects now opening before us.

MR. DELAFIELD'S NOTES FOR AN ADDRESS TO THE FARMERS OF ONONDAGA COUNTY, SEPTEMBER 16, 1853.

GLOBE HOTEL, SYRACUSE,
Saturday, 17th Sept. 1853.

H. D. DIDAMA, Jr., Secretary, &c., Onondaga County Agricultural Society:

Dear Sir:—In accordance with the request of the Onondaga County Agricultural Society, I send herewith the notes from which I delivered the address on the 16th inst. The matter not contained in these notes was incidental, or drawn forth at the moment as illustrating the principles advanced.

The aim of my notes was to exhibit the *necessity* of knowledge and science, combined with practice in our vocation as farmers; and to aid in the elevation of our class to the position they are entitled to enjoy.

The resolution of your society permits me to infer that some benefit may be derived from a further consideration of the facts and views presented. If they prove a means of extending the objects of your society, or advancing in any degree our agricultural interests, I shall feel pleasure in having performed an agreeable duty.

Respectfully yours. J. DELAFIELD.

MR. PRESIDENT, AND FARMERS OF ONONDAGA COUNTY:—

Standing in the throng of men here assembled—men who have long cultivated the soil of Onondaga, I may well feel some hesitation—some difficulty in expressing ideas which press for utterance: not that any doubts exist touching the facts and principles to be laid before you, but because of a repugnance to entertain

* We copy from the ordinances, rules and regulations of the State Agricultural College, the following list of officers, from either of whom, all desirable information may be obtained: John Delafield, President, Oaklands, Rose Hill Post Office, Seneca county. Hon. Jno. A. King, Chairman of Board of Trustees, Jamaica, Queens county. Joel W. Bacon, Secretary, Waterloo, Seneca county. N. B. Kidder, Treasurer, Geneva, N. Y.

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(possibly) differences of opinion upon subjects of importance to our farming systems;—systems which have probably been pursued for ages, and sanctioned by habit and general practice, if not by desired results. Another reason may be found in the long cherished notion that, as *practical farmers* we need but little advice; because our practice if held from boy-hood to old age, is not to be improved by means of science or modern discoveries. This notion does so extensively prevail in our Union, that it seems almost presumptuous to deny the position, and hardihood to venture an argument in regard to it. Let us however for once, examine this subject, let us look at it calmly; and as prefatory to some practical observations, let us test the truth of this notion; let us fairly weigh facts and award the victory to which side soever truth most closely clings.

To deserve your attention—to secure your decision as upright judges, it is proposed to lay before you facts or truths, and not *opinions*, and thus your minds will be free from any bias derivable from the speaker. It is hoped that you will on this occasion lay aside for the moment all *self-reliance* or *self-confidence*, remembering the condition of the eastern king, who, when told that at certain seasons of the year, the waters of northern Europe became so hard that his largest elephant might safely walk on them, replied that thus far he had believed, but now he was confident that the narrator was devoid of truth and veracity—let us then hope that such self-confidence in our own experience will not find so firm a resting place, as in the mind of this eastern potentate. Every man who works his own farm is a practical farmer, that is—the mechanical operations of his farm are conducted by the aid of his own arm—by the management and application of his own tools and animals. Does it mean anything more? Perhaps it may. Such a man may be fifty years of age, brought up and instructed under the careful, anxious eye of a worthy sire, whose lessons of industry and of *imitation* were zealously instilled and deeply engraved; attentive observation may have taught him the duration of seasons—the usual periods of seed time and harvest—and to perform such *arts* of agriculture as his eye had witnessed! The natural fertility of a new soil has probably returned a rich reward for his labor, for a limited pe-

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riod: and thus far without demand for extraordinary exertion, he is happy and content.

My friends, is this not a true portraiture of the practical farmer of our country? But we may go further. His life of fifty years has given to him at least thirty years of repeated practice of the same system, and this is called *experience*, though no experiment has changed the long cherished system of his self-reliant practice. Now gentlemen we here reach the difficulty, the stumbling block which must be removed. When we speak of a "man of experience" do you not mean "a man of wisdom" or "a man of knowledge?" Such I apprehend is the meaning of the term; if so you cannot fairly apply the term to such of our number, as claim to be practical farmers only; and for this reason; because the father could not and did not know how to communicate to his son, the *principles* or laws of nature, or I should say of the Creator who mercifully sustained him through comparative darkness. Neither father nor son could know in their day, the elements whereof the grain plants were composed; they did not know the varied elements of food necessary for the full development of vegetable growth; they did not know the effects of climate, or causes of varied temperature governed by mountain ranges or elevations, above the ocean; these truths could not be reached by the practical man; they are to be found only by the seeker after knowledge, by oft repeated experiments and comparisons.

Practice therefore without knowledge halts far, very far behind the wisdom we need for success, and this will appear by facts illustrating these positions as we proceed. These portraitures will, it is believed, convince you that the merely practical man, though valuable and important, is a copyist of olden practices; his experience is trammelled, because he is without knowledge! He is like the eastern king who ridiculed the idea that, water could become so hard as to admit walking in safety on its surface.

The progress of knowledge is not however confined to facts alone; it influences and prepares the mind, step by step, for the reception of other truths, and thus by degrees disenthralls it from early prejudices and self confidence, influences which do ever interfere with the correct judgment of men. Does not the progress

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of knowledge in this, your county, fully prove and illustrate this truth? Look at it. Twenty years ago your salt works produced in a year about 163,000 bushels. This city then contained 2,565 souls! If at that day, any far seeing man had asserted that in 1850, your salt product would amount to near *five millions* of bushels, and your people number more than 22,000, would he not have been subjected to the doubts and jeers of the multitude? Yet in the progress of knowledge, of science, and art, how easy has been the transition of this central place, from a village on the bank of a canal, to a city of influence and power, of wealth, munificence, and I may say, approaching magnificence; the change has been gradual, and the mind was prepared for it by degrees.* Just so is it, with the science of agriculture; a short time has passed since the rough wooden mold-board has given place to one of polished steel; the sickle has yielded to the grain cradle, which has recently received its death blow in the reaper. Only twelve years ago, most of us ridiculed the idea of cutting wheat and other grains by machinery, with horses for the motive power; yet in every part of the country during the last two months, the grain has fallen untouched by the hand of man; the rapid-moving machine allows our labor to be saved for other important purposes.† Here then is a fact so frequently before our eyes within a year or two, that we have generally brought our minds to confide in an object which, five years ago, was as generally condemned. Surely this presents another argument for withholding our self confidence, and is the effect of the advance of knowledge. But gentlemen, we are as farmers in a peculiar position: our predecessors were for the most part deprived of education and instruction, a privation arising necessarily from the labor required to secure sustenance in the new settlements, and soon after from the necessity for heroic deeds to secure a free enjoyment of their hard earned possessions; these are historic truths, offering ample

* Mr. Delafield did not confine himself closely to his notes in delivering his address, but occasionally introduced remarks which the occasion demanded, or which had been suggested during his short visit to our county. At this point, he alluded to Mr. Geddes, and some of the early settlers of this county, giving due credit to their labors. H. D. D.

† The speaker here instanced the progress, in the right direction, which has been made in Seneca county. He also alluded to the practice of drilling in wheat, and expressed his opinion that it is unprofitable in our country at present, where labor is so expensive; and that its advantages have been much over-rated. H. D. D.

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apology for the absence of all certain rules in the practice of agriculture.

Another satisfactory reason for our present condition, may be found in the fact, that until the year 1815, agriculture was without science; it was an *art* only, in which the body and hands, but not the mind were engaged; it could not and did not advance beyond the mechanical operations of stirring the earth—sowing and planting seed, and removing weeds. It was not until about thirty-five years ago, that any of the elements of matter connected with our employments were discovered, and even to this day they are imperfectly understood. It was in 1815, that Sir Humphrey Davy applied his powerful mind to the examination of the earth, and discovered that every soil contained a variety of elements; discoveries which enabled the farmers of Great Britain, by increased fertility, to sustain burthens and sacrifices such as no other nation on earth has sustained.

In this country, we conducted our farms for so many years without rudder or compass, that we have found it very difficult to yield our early convictions and self reliance to the truths of science. This word "*science*," as applied to agriculture, has an alarming sound in the ears of many: it appears like the graveyard phantom, wrapt in the mystic winding sheet, eluding the grasp of those who fearlessly desire to understand, while agitating the tremulous nerves of the many, who stand aloof shivering at the frightful mystery. But why this alarm? Why is our equanimity disturbed by a sound? Is it not because we *do not fully comprehend its meaning*? Or is it because we fear some innovation upon our empiric practices, so long cherished? But what does this word "science" truly mean? Nothing more, than a collection of *truths or principles*, a knowledge and due application of which to our profession, produce certain events, to be *uniformly* followed by certain other events; in other words, science is perfect knowledge of things in their constitutions, elements, properties, and effects. The word is often used also in connection with art, the latter expressing the power or skill in using science: and be assured that the best and most successful artist in any pursuit, is the man who uses the principles of science with the greatest

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skill and dexterity. Now, gentlemen, is there any thing in this word, of which we need to fear, or be ashamed? No! no! On the contrary, ought we not to hang our heads in confusion, when we turn from the light of science to grope in the dark paths of ignorance—when we commit ourselves, and all that is dear to us, to the whirling eddies of error, destitute of knowledge?

I have said that until the year 1815, farming was practised as an *art* only—that is, our work was mechanical; it was devoted to the arrangement of objects around us, with an unstable hope of desired results; it was without the knowledge of the elements composing the things and objects so arranged; and thus circumstanced, we found sufficient excuse for the *past*. We have less or none, however, for deficiencies *present*, or to follow. But here it may be asked, where are the indications of want of knowledge or skill on our part? My friends, you shall have two indications, and they will answer the question probably to our entire conviction. *First*, your farms are in the aggregate, *less productive* than formerly. *Second*, farmers are not generally held in the same esteem as men of other professions. These truths result from a want of science applied to our practical labors, and an absence of zeal in the pursuit of knowledge.

Gentlemen, these are unwelcome and momentous truths, not to be doubted; the records of your county plainly show and declare, that many of your important crops have greatly diminished in quantity; there stands the truth blazoned on the public page, crying with a warning voice for care, caution, study, knowledge. Methinks I see a lurking doubt, and hear it asked—can this be? Can the beautiful hills and valleys of Onondaga be otherwise than as fruitful as they are beautiful? Yes, gentlemen, examine for yourselves, and you will find that your stock of *every class* has decreased in number; your wheat, peas, beans, buckwheat, potatoes, flax, and wool, have all diminished in quantity. The products of domestic industry have also decreased largely, and it may well be feared that an insidious enemy has been substituted, by the introduction of enervating luxury and its usual attendants. This is not the place to offer more than a regret at the too rapid introduction of ornament and of false refinement; yet as it is

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probably a collateral and one among minor causes, for the deterioration named, it is alluded to for consideration at your leisure.*

Thus you have facts from official records, sufficient to prove that the agricultural products of your county and farms are less than formerly; that your systems, or your labors, are insufficient to maintain fertility, and need reform. The inference is, a want of science; for man will never willingly permit decay and destruction, if *he knows how* to prevent it.

As another indication of the want of knowledge, it has been stated, that as farmers, we are not generally in equal esteem with men of other classes. In proof of this position, look to the men in high places—to the places of renown, distinction and honor—walk through the chambers of our national capitol, and our legislative halls. Who form the mass of these selected persons? Certainly not our farmers; not the men from whom the great wealth and strength of our country is derived; not from the class which forms three-fourths of this Union. No, gentlemen, it is from the remaining one-fourth of our people, who, with a sagacity which does them honor, have devoted themselves ardently to the acquisition of knowledge, necessarily out-stripping their fellows, winning capacity for high office, and success in securing it. Such are the persons who furnish candidates for the government of our country, and its subordinate positions. Does not this truth speak to us in powerful tones? Does it not point to our large numerical superiority and moral influence? My friends and fellow-farmers, many of us cannot see the day star on high, inviting us to greater efforts in the search for knowledge and truth. Multitudes of our body will be gathered to the dust before its brightness shall dissipate the dark shadows around us; yet be of good cheer; a bright light is beaming upon us from afar, to dissipate our night of ignorance, and lead us to a position from whence we may invite our friends and fellow beings of the world, to participate in the pure joys and rich blessings showered upon us by knowledge and truth. Let me beseech you to heed these half prophetic words, for the sake of those who are to succeed us.

* See the accompanying table, compiled from census of 1845 and 1850.

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Gladly would I extend and press upon you these claims of the farmer's condition, if time permitted, for proudly anxious we should feel, first to deserve, and then to assume, the position and power which the agriculturists of this nation are to hold. Mark me, however, not to hold as a right—for in rights all are equal—but to hold them from our fellow beings as due to merit, to integrity of purpose, based upon education and knowledge, under circumstances most favorable to purity and sound investigation.

Let me repeat, that as regards *right*, all men are equally eligible; but as regards *mental cultivation*, we farmers have been far from the standard, in proportion to our numbers.

Now, I would ask, is not this *all true*? and, being true, how long shall we endure being deemed and treated as inferior in intellectual powers? as automatons, which can do only such things as a few wheels and springs are fitted for? The fault is now, and will continue to be our own, if we remain in this condition.

Mr. President, it seems to me, that facts sufficient have been presented to prove the declarations made—bold and strong as they are—and by reasoning on these facts, we may readily perceive how they operate adversely to our general interests; reducing our crops and stock. We may also understand how greatly knowledge affects the pecuniary value of our labors, and all results derived from them; because an educated mind enables its possessor to employ *power* with *economy*, yielding results far superior in quantity and quality to those derived from the less educated or instructed.

The surprising advance of science and art in all departments of life, excepting agriculture, has necessarily drawn attention to our vocation, in the past few years; an early consequence was, that bold pretensions of ignorance and cupidity took advantage of our necessities, subjecting us to serious loss and hindrance.

Specific manures have been urged upon our notice as useful and remedial. with most positive and determined assurances; they have proved as valueless as the ignorance of the makers, and as noxious as their avarice—leading us to doubt even when truth

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and real value were spread before us: we have been deluded by crude theories and presumptuous assertions from pseudo-chemists, or persons imperfectly educated in the science, propagating error and retarding improvement.

These difficulties are perhaps naturally inherent to the early introduction of new principles, or rather, of principles new to us; yet the advance which has been made in science applicable to agriculture, by such men as Silliman, Norton, Horsford, Antisell, and a few others in this country, is redeeming the science of chemistry from the odium which pretenders had well nigh established. It seems, however, with the advance of knowledge, we may reasonably conclude that chemistry *alone* will do but little for practical agriculture. All must admit that *truth* is in science, yet it is not every man who can extract and exhibit it. Its range is so wide, that the life of man will not suffice for the necessary amount of examination and study to *perfect* a student in *all* its relative connexions; hence the many errors put forth, against which we are generally unprepared for defence.

Happily we now have men in this country possessing vigorous intellects for investigation—men who have knowledge enough to know when they are in error, and courage enough to avow it, or to avoid its exhibition to the people. In your own county, you can proudly boast the name of Geddes—a name intimately connected with the canal and your county's welfare; of Judge Forman, the energetic founder of this city. These, and a long line of other honored names, belong to your county. Names on which memory loves to dwell, as objects of regard, and as connected with deeds worthy of our imitation. I cannot omit the name of Willis Gaylord, a son of Onondaga, of whom it has been truly said, he was "intellectual, chaste, agreeable, and instructive." As a farmer we claim him prominent in our ranks, and the Transactions of our State Agricultural Society give a record of his value, while they perpetuate his name; the influences of his mind live in rich freshness among us, proving that theory, science and practice are not only compatible, but *indispensable* for full success in agriculture.

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We might dwell with pleasure and profit upon the intellectual riches of your county, but another subject claims a passing notice.

You have among you a "suspicious plant," and to this plant we may usefully draw the attention of farmers who rely on the proceeds of a few acres, or limited arable areas. I allude to the broad leaved plant belonging to the family known to botanists as the *suspicious family*. It belongs to the class in which we find henbane (*hyoscyamus*), and thorn apple (*stramonium*), and the deadly night shade (*belladonna*). While fresh and growing, it has neither taste nor smell; neither will any of our animals, at any time, meddle with this suspicious herb.

When ripe and dried, it acquires a bitter flavor, stupefying the senses. In this description of the suspicious plant, who does not recognize the familiar friend of most men?—of man, the only living being that tolerates and caresses its lethean properties? This would seem strange and unaccountable, were it not easy to show that large profits flow from its culture, and that its cultivation is sanctioned and stimulated by the tyrant, fashion. Fashion has firmly established a strange infatuation in regard to this plant, for there is not a nutritious particle in either its root or stem, or leaf; it has neither beauty nor sweet odor; if taken internally, it produces sickness, vertigo, and death; it is the base of *nicotine*, a poison so deadly, that five drops will destroy life. With these facts well known and established, it is an article of importance in the commerce of the world, and large profit to our nation; it is an object of manufacture, giving occupation to thousands; and in some one of various forms, it is consumed by millions of the human family. In our own country, the cultivation of this tobacco plant is carried to the extent of *two hundred millions* of pounds annually. It is curious and interesting to examine the progress of this noisome weed, which now gives value to some of the rich acres of Onondaga. It was first mentioned by an Italian traveller,* among the people of the West India islands (1542). A few years afterwards, it was transplanted to Lisbon, as a medicinal herb (1559). In 1586, Sir Walter Raleigh having learned the accomplishment of smoking tobacco in Virginia, introduced the

* Benzoni.

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fashion among the gay cavaliers of Queen Elizabeth's court; from thence it was carried rapidly through Holland, Spain, France, and Portugal; Turkey became subject to it; Persia, India, and China, submitted to it. In Great Britain, endeavors were made by James the First to stem the torrent of fashion, by publishing a book adverse to what he termed "a habit derived from the barbarous wild Americans;" predicting that if persevered in, females would be compelled to have recourse to it, to enable them to endure their filthy husbands (1600). In 1628, a hymn was written in honor of the weed, and Pope Urban actually excommunicated those who took snuff in the churches.

With all forbidden objects, the stronger the restraint, so much greater is the desire to possess them. So was it with tobacco; and to this day, European governments have derived a large revenue by heavy imposts upon this strangely fashionable luxury.

In this country, we produce 200,000,000 of pounds; we export about one-half, leaving from ninety to one hundred millions of pounds for home consumption, or about twelve pounds per man. Supposing the average value of the raw material to be seven cents per pound, we consume in value, $6,370,000; or if manufactured, we consume, or blow away in smoke and snuff dust, or quidding, a value equal to $250,000,000 per annum.

Now we may deduce a few facts useful to farmers, from the cultivation of the plant. It was my intention to have offered some caution in regard to the care and cure of tobacco, but time admonishes me to be brief; let me, therefore, only point to the actual results of tobacco planting in Connecticut, and this State.

In Connecticut, tobacco land is valued at $100 per acre, and it gives an average yield of 1,500 pounds of seed leaf tobacco.

Then the cost of cultivation is, per acre,.....	$40 00
Shipping, housing, and delivery,....	20 00
Interest on cost of land,.....	6 00
Cost per acre,....	$66 00

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The average market value is $8 per 100 pounds; or, when taken loose, it is per acre, $120; presenting a *net profit* of $54 per acre to the planter.

In this State, we may value tobacco land at $75 per acre, and estimate the average yield of leaf tobacco at 1,200 pounds per acre.

Then the interest on cost of the land is, ...	$5 25
Cost of cultivation, ...	30 00
Shipping, housing, and delivery, ...	20 00
	$55 25
Average market value, $8 per 100 pounds, or per acre, ..	96 00
Net profit per acre, ...	$40 75

Now, gentlemen, I present these figures and results, not with any design to encourage extensive planting of tobacco, but to suggest the use of small areas of land to farmers occupying small farms, or farms of less size than fifty acres, and such as being within a convenient distance from cities and villages, where manure may be readily obtained.

Gentlemen, I have stated that your county is, in the aggregate, less productive than heretofore. Yet I must say, that you present farms and systems of farming, worthy of all praise, and equal to the best cultivation known in our State.*

With this admission, permit me to add, there is *need* for *an increase* of your herds and flocks; for an increase of such cereal grains as your soil and climate will warrant. It is important to your welfare now,—*now*, when your agricultural condition may so readily be improved, and deterioration be arrested—now, when the whole world, or the nations of the earth, seem ready to ask from us bread, and I had almost said to seek from us succor and advice. This may sound presumptuous, from our yet young nation; it may be *premature*, but the day is at hand; the light of our sun is gilding the morning of the day, during which, we shall be called upon to aid our fellow creatures even to the ends of the

* Here Mr. D. spoke in high praise of the cultivation and excellence of some farms which had fallen under his observation during his visit. H. D. D.

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earth. This is no dream—no vision; it was the destiny engraved upon our characters when our shackles were broken in 1776; when oppression ceased, and this continent presented a place of safety and refuge from the turmoils, exactions and thraldom of the older nations of the earth. The events which now agitate the powers of Europe and Asia; the happy condition of our own nation; the prosperity of our State; the onward and steady elevation of our agricultural population, which I deem to be the only *true basis* of our greatness; these conditions almost tempt me to wish that years might be added to an already long life, that the eye might witness the destiny now foreshadowed.

With these truths before you, men of Onondaga, what will you do? Let us expunge from our lexicons, the word "can't;" ruin is in its path; it carries loss to every being who yields to its use. Let us rather say "we will," and depend upon it, with science for our guide, success will crown every effort.

To stand first among the counties in this noble State, you need but say in sincerity, "WE WILL."

Comparative View of the Agricultural condition of the county of Onondaga in 1850 *and* 1845.

	1850.	1845.	Increase.	Decrease.
Improved acres,	317,280	311,872	5,408	
Unimproved acres,	113,291			
Horses,	13,987	16,968	.....	2,981
Cows,	21,203	24,595	.....	3,392
Other cattle,	25,158	24,903	225	
Sheep,	112,990	190,429	.....	77,439
Swine,	31,018	52,907	.....	21,889
Wheat,	427,535	636,177	.....	208,542
Barley,	440,293	360,421	78,872	
Oats,	891,331	829,002	62,329	
Rye,	45,095	10,107	34,988	
Indian corn,	782,220	516,496	265,724	
Peas and beans,	24,081	111,169	.....	87,088
Buckwheat,	33,673	51,198	.....	17,525
Potatoes,	437,566	573,896	.....	136,330
Hay, tons,	82,004			
Butter, lbs.,	2,147,518	2,123,787	23,731	
Cheese, "	1,004,878	749,838	255,040	
Clover seed, bush.,	2,442			
Other grass seed,	1,198			
Flax, lbs.,	20,064	107,035	.....	86,971
Flax seed, bush.,	1,703			
Wool,	345,880	423,863	.....	77,983
Maple sugar,	128,785			
Molasses,	582			
Honey and beeswax,	39,766			
Domestic fabrics,	$24.430	$84,996	.....	$60,566
Animals slaughtered,	474,235			
Population,	85,900	70,175		

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The annual meeting of the Onondaga County Agricultural Society was held at the Syracuse House, Jan. 12th, 1854.

Present—The President, Vice-presidents, Secretaries, Treasurer, many members of the town committees, and several members of the society.

Messrs. Nearing, Butts and Cobb, were appointed a committee to examine applications for premiums on corn, barley and hops; and Messrs. Losey, Peck and Sheppard, a committee on oats, beans, potatoes and carrots.

Remarks were made by Mr. L. W. Hall, to the effect that the society is now in debt some two hundred dollars, owing in part to the inclement weather during the last fair, but chiefly to the indifference of the mass of farmers throughout the county. While the agriculturists receive a large share of the premiums, they furnish but a very small proportion of the funds necessary to carry on the operations of the society. It appeared from a list of the members published in the Transactions of the society, that two-thirds of all the members are residents of Syracuse, and that the average number from each town, is only eight. He concluded by appealing to members to make earnest efforts to sustain the society, and suggested that each town committee should make themselves responsible for a certain number of members, from their respective districts.

Officers for 1854.—Jason C. Woodruff, Syracuse, President; E. D. Cobb, De Witt, First Vice-president; Luther Baker, Lafayette, Second Vice-president; Henry D. Didama, Salina, Recording Secretary; Davis Cossit, Onondaga, Corresponding Secretary; James S. Davis, Syracuse, Treasurer.

The following committee was selected to attend the annual meeting of the State Society, and attempt to secure the next State Fair for Syracuse: J. C. Woodruff, D. S. Earll, George Geddes, Mars Nearing, Seth Hutchinson. By a vote of the Society, the members of this committee are authorised to associate with themselves, such persons as they may think proper.

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Mayor McCarthy, Alderman Williams, Dudley Phelps, William Winton and W. D. Stewart, were chosen a committee to solicit subscriptions sufficient to pay the expense of the society in case the fair should be held in Syracuse.

The President was authorised to fill vacancies in the above committee, caused by the declination of any of its members.

The committee on farm crops reported the following awards:

Best crop of corn, 93 5-6 bushels to the acre, Chester Baker,	$8 00
Second best crop, 90 1-4 bushels, H. & G. Butts,	5 00
Best crop of barley, 52 3-4 bushels, C. Baker,	4 00
Best crop of hops, I. H. McClary,	3 00
Best crop of oats, 70 bushels, C. Baker,	4 00
Best crop of carrots, 600 bushels, C. Baker,	4 00
Best crop of beans, 35 1-2 bushels, D. Hamlin,	4 50
Best crop of potatoes, 200 bushels, H. Goodwin,	4 00

A vote of thanks was tendered to the old officers of the society, for faithful and efficient services.

Below will be found the statements of the successful applicants for premiums. In two instances, at least, the applications were without the necessary certificates, and could not be considered by the committees. Thus the crop of hops, raised by M. Keith of Pompey, was nearly twice as large as that of Mr. Mc Clary, but the neglect of Mr. Keith to furnish any certificate as to the measurement of the land or weight of crops, deprived him of the premium. Future applicants will be more careful to comply with the regulations of the society.

HOPS.

I plant my hops eight by nine feet apart. Manure with strong stable manure in fall, to guard from frost. Plow in the spring, and set two poles to each hill, about the first of May. The shoots are carefully tied to the poles with woolen yarn, and the field is kept clean with the plow and cultivator, during the season.

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About the first of September, the hops are picked, dried in kilns, and packed for market. Products of half an acre, 474 pounds.

Cost of cultivation, plowing, &c., ...	$25 00
Value of hops, at forty-five cents,.....	213 30
Net profit on half an acre,.....	188 30

I. N. McCLARY.

December, 1853.

BARLEY.

The ground sown, two acres; soil, sandy loam; clover sod; plowed in the fall seven inches deep; cultivated in the spring twice, and sowed two and a half bushels per acre; then dragged and salted the fifteenth of April; sowed one bushel of salt, and one-half bushel of plaster, per acre; harvested the first of August. On the two acres, I harvested one hundred and five bushels and thirteen pounds.

C. BAKER.

December, 1853.

BEANS.

CLAY, *December* 15, 1853.

Sir—I send you a statement of the manner of cultivation of a small piece of beans, which I enter for premium. The piece, in question, had laid to grass for ten years; plowed, just before planting, with the double Michigan plow; harrowed once over with the Geddes harrow; rows marked twenty inches apart; hills fifteen inches apart; planted the first week in June; hoed once; used no manure of any kind. Said piece is seven rods by nine rods, and the product is fourteen bushels.

DAVID HAMLIN.

CORN.

The ground planted was three acres corn last year, on a clover-sod soil; sandy loam; manured fifty loads of long manure per acre; plowed seven inches deep; dragged and marked one way, three feet two inches, and planted in the marks two feet ten inches, on the 12th of May, with eight rowed yellow corn. As soon as up, I sowed a small handful of ashes on each hill; culti-

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vated three times; hoed twice; cut up and set round the field, the twenty-fifth of August, husked in September. On the three acres, I harvested five hundred and sixty-two bushels of ears of corn.

C. BAKER.

December, 1853.

CARROTS.

The ground sown, one-half acre; clover sod; soil, sandy loam; plowed in the fall, from seven to eight inches deep; manured with fiteen loads of rotten manure, and cultivated four times; dragged twice; sowed in rows eighteen inches apart, the fifteenth of May; weed them once; hoed between the rows twice. On the half acre, I harvested three hundred bushels.

C. BAKER.

December, 1853.

OATS.

The ground sown was two acres; soil, sandy loam; clover sod; plowed in the spring, six inches deep; sowed the 20th of April, three bushels per acre; cultivated once; dragged and rolled. From the two acres, I harvested one hundred and forty bushels.

C. BAKER.

December, 1853.

All the above ground, I bought five years ago last spring, and it had been cropped for years, so that the last crop of oats that was raised previous to my buying it, did not yield but about twenty bushels per acre. C. B.

POTATOES.

I had in the fall of 1851, a field that had been down to pasture five years, a sandy loam or marl soil, well covered with pine stumps. I procured a machine, and pulled them in the fall, and in the spring of 1852, I drew off the stumps, placed them into a fence on two sides of the field, plowed seven inches deep, dragged it well, planted it with corn, had a good crop but not measured. In the spring of 1853, I put on, say twelve loads of coarse barn-yard manure on one acre; plowed and dragged; planted potatoes in drills three feet apart: potatoes cut; fifteen inches apart;

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one piece in a place; about nine bushels seed to the acre; went through it twice with the cultivator; no hoeing at all; produced two hundred and seventeen bushels, on the said acre.

HARVEY GOODWIN.

Clay, Nov., 21, 1853.

CORN.

MANLIUS, *Dec.*, 12, 1853.

Mr. H. D. DIDAMA: Dear Sir—We submit to you the following statement of our corn crops, grown on nine acres and thirty-two and a half rods of land, the past season. In the spring of 1848, the ground was seeded to clover, a while in wheat, and has been occupied since as pasture and meadow.

Previous to plowing last spring, we drew on and spread over the ground, one hundred loads of coarse unfermented barn yard manure. Between the twelfth and eighteenth of May, (the lateness of the spring and other work having prevented our doing it sooner,) we plowed the ground about eight inches deep, then harrowed it over once in a place, then followed with the wheel cultivator, then finished by cross harrowing, lapping the harrow one half its width each time crossing the field. Then marked both ways, the rows being three and a half feet apart. The 24th of May, we planted, putting from three to five kernels in each hill. The corn was planted dry, the variety, the large eight rowed yellow with red blaze. As soon as it could be plainly seen, a teaspoonful of plaster was placed about each hill. From the 16th to the 22d of June, it was cleared out by the cultivator by going through both ways twice in a row, and thoroughly hoeing. From July 7th to 11th, it was again cultivated and hoed in the same manner. The last of September, the corn was cut up by the ground and stooked. Between the first and middle of November, it was husked and thrown upon the ground, then taken up and carefully measured into a cart, in a basket calculated to hold plump one bushel of ears.

The average weight of a basket of ears was forty-five and a quarter pounds; of this, twelve pounds were cobs, and the balance, thirty-three and a quarter pounds, corn; making about

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eighty-two and four tenth bushels of corn to the acre, on the whole field.

One acre in the above field (eight by twenty rods) was measured, and the corn harvested by itself, yielding one hundred and fifty-two baskets, or ninety and one-fourth bushels of corn.

In the above statement, it will be seen that the corn was weighed and estimated at the time of harvesting, without any allowance being made for shrinkage. The corn seemed to be quite dry, while the cob was considerably wet. To know just how much the corn and cobs could be made to shrink, we placed them over the oven, in a warm place, and there let them remain till the 12th of December, inst., when we again weighed them. Corn weighed twenty-eight and three quarter pounds, cobs, seven pounds, making a shrinkage in the corn of only four and a half pounds, while the cobs shrunk five pounds.

All of which is respectfull submitted,

H. & G. BUTTS.

MANLIUS, 1853.

ONTARIO.

In the year 1851, premiums were first offered by this Society, to encourage the introduction of improved breeds of domestic animals into this county. The result has been so far favorable. Some very fine short horn Durhams have been exhibited at the last two annual shows. Also several thorough-bred Devons, have been brought into the county. Distinct premiums have also been offered for long-wooled sheep, (Leicesters,) and for middle-wooled, (Southdowns.) The consequence is that the farmers of this county have, during the last two years, devoted more attention to rearing improved cattle, and large sheep, suitable for the Albany, New-York and Boston markets. Two lines of railways passing through this county and meeting at its center, increased facilities are presented for sending to market any animals reared and fattened.

Wheat Midge.—Four years ago last harvest, the wheat midge first attracted the notice of farmers and caused anxiety for the

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wheat crop in this county. The insect appeared first on the clay flats north and east of Canandaigua lake. In 1850-51 the range of the midge was much extended; and in 1852 and 1853 it reached nearly every part of the county. For two years past the wheat crops on the strong clay loams, which were formerly very productive in this crop, have, in many cases, been scarcely worth harvesting. Soils light or gravelly and dry, have, in many instances, yielded wheat crops, little or not at all injured by the midge. Early sowing is thought to be favorable to the security of the crop. Those varieties which ripen earliest have been found on clay soils to produce, sometimes, a bountiful crop. The Mediterranean wheat is of this class. In consequence of the uncertainty of the wheat crop, barley has been more largely cultivated. The midge is sometimes found in barley and in red clover. The attention of many farmers has recently been turned more than heretofore to the raising of cattle and sheep.

Potato Rot.—During the year 1853, the potato rot has returned, and prevailed extensively in this county. If in any soil the potato has escaped the disease, it has been in light sandy soils. This crop, which ten years ago, and for many years before, was cultivated extensively, and with profit, has now become precarious; and even when sound, is so small as to be but little remunerative. It is to be hoped that some effectual remedy may be discovered to the remarkable decay of a root so valuable to man.

This county produces large quantities of fruit, especially apples. It is difficult to estimate the number of barrels exported annually; it is supposed to be not less than 40,000 barrels.

At the winter show, (Feb. 1853,) the fat cattle and sheep on exhibition were very fine. Most of these animals were subsequently entered at the State Fair at Albany, and received a long list of premiums.

Annexed is a sketch of the annual cattle show and fair of Ontario County, held at Geneva, on the 28th and 29th of September.

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AGRICULTURAL FAIR AND CATTLE SHOW OF ONTARIO COUNTY.

This fair took place at Geneva, on Wednesday and Thursday of last week. By the public spirit and liberality of the citizens of Geneva and vicinity, a subscription of four hundred dollars was raised. From the avails of this a piece of ground of eight acres, admirably adapted to the object, was rented and enclosed with a high fence, with gates of entrance and exit; 150 pens for cattle, sheep, &c., were built; a ring for the exhibition of horses was graded and enclosed, and posts for fastening horses and cattle were set.

Two large tents and several smaller ones were spread for the exhibition of fruits, manufactures, fancy work, &c. Suitable grounds were appropriated for agricultural implements, carriages, &c.

The weather of the first day was very unfavorable, yet the entries were numerous. Notice was given that entries might be made till ten o'clock of the second day.

The second day was clear and beautiful. The entries of horses reached nearly a hundred; of cattle as many, and numerous lots of sheep and swine.

The exhibition of horses was very attractive. The large ring was surrounded by a solid body of interested farmers and their sons.

Floral hall, with its fruits and fancy work, was thronged by hundreds. Some idea may be formed of the assemblage, when it was learned that about $300 were received at the gate for single shilling tickets on the last day.

The specimens of fruit from the gardens and nurseries of Geneva and Phelps were superior in size and beauty. Grapes from Mr. H. L. Suydam, of Geneva, Mr. John Greig, of Canandaigua, almost realized the ancient clusters of the Promised Land.

The Address of Mr. Delafield, of Seneca county, was instructive, useful and highly suggestive to the farmer.

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The following is the list of officers for 1853.—James L. Monier, of Naples, President; William Johnson, Seneca, B. F. Hawks, Phelps, David Pickett, Gorham, Hiram Ashley, Richmond, Truman Dryer, Victor, Vice-presidents; William H. Lamport, Gorham, Recording Secretary; Henry Howe, Canandaigua, Corresponding Secretary; William Jeffrey, Canandaigua, Treasurer.

Officers for the year 1854.—William Hildreth, Phelps, President; fifteen Vice-presidents, (one from each town;) James S. Cooley, Canandaigna, Treasurer; John S. Bates, Canandaigua, Recording Secretary; Henry Howe, Canandaigua, Corresponding Secretary.

ADDRESS, BY THE LATE JOHN DELAFIELD OF OAKLANDS.

This address was delivered but a few days previous to the lamented death of Mr. Delafield, and is given entire. It is worthy of a most careful and attentive perusal by every farmer in our country, as well as by those to whom it was addressed.

Notes for an Address to the Farmers of Ontario, at their Annual Fair, September 29, 1853.

FARMERS:

You have courteously invited me to address you at this festive season, when your crops are garnered, and plenty with peace makes the heart joyful, and the countenance to beam with content and gratitude. Hitherto it has been customary to select a speaker from among our accomplished statesmen, or from citizens whose talents and powers have swayed our courts and juries—now rioting in wit, at times rough with horror, yet ever able to instruct the reason and control the passions. Upon the present occasion you have selected a person from your own class—a Farmer—more accustomed to observing and endeavoring to reason upon facts and wonders which daily present themselves to the agriculturist, than measuring wit or arguments with eloquent men of other professions.

As a farmer, then, I propose to present to you a few truths for your consideration, connected with our practical operations;

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indulging a hope that they may lead many of you to deeper investigations, and per chance to an altered system.

Let me premise that though fault finding is one of the most easy and frequent occupations of life, so also is it unamiable and inconclusive; if, then, the practice of some of us is not approved, be assured it is not in the spirit of condemnation, but solely with a motive to improvement. If *facts* and *truths* are declared, if injurious results of prevailing practices are exhibited, let your unbiased judgments calmly examine them, not heeding the *opinions* of the speaker, but weighing the statements presented.

Allusion has been made to the facts and wonders which daily claim our attention; let us allude to them once more, because daily familiarity, without attention, has doubtless left many of us ignorant of facts both beautiful and wonderful—and above all *important* to a more perfect understanding of our profession.

Your county "has been, and still is, undergoing perpetual change; the water and land have changed places;—this place was once the bottom of an ocean,—the present ocean is changing, and in many places is converted into dry land." How few of us realize these truths, even though declared in Holy Writ, which says: "Every mountain and hill shall be laid low." (Isaiah 40: 4.) Again, "For the mountains shall depart, and the hills be removed." (Isaiah 54: 10.) And again, "The valley shall be filled with water." (2 Kings, 17.) But, it may be said, these words are figurative; then let us look at the earth, the earth we cultivate, the soils and sub-soils of our farms, our rocks and mountains, and there we find countless myriads of animals and plants entombed. And since we have, by aid of the miscroscope, discovered the remains of insects in grains of sand and drops of water, who shall dare to say that the very dust wafted o'er our fields by every fitful gust, does not teem with relics of beings that lived and died long before the creation of the human race?* Omitting, however, these profound wonders of the earth and sea, let me ask whence come the masses of shells found on the hills and in the valleys of this region? Whence come the relics of animal

* Mantell.

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and vegetable organization so often found at great depths from the surface of our farms? Whence come the great masses of *marl* now abundantly found to enrich our fields? They are, gentlemen, the deposits from an ocean which once covered this fair country. To give you some idea of this wonderful provision for our good, let me state that in the brooks around West Point, in the first warm days of spring, the bottoms are literally covered with a red iron colored matter full a quarter of an inch thick, which is a mass of millions and millions of exquisitely beautiful bodies. Every submerged stone, twig or spear of grass is enveloped by them, and every waving plume-like appearance thus presented is often extremely elegant. (The coloring matter is completely removed by alcohol, which leaves the frames or shell cases as colorless as glass, and are found to resist the action of fire.)† So in like manner were the marl deposits of our region formed and left by the subsiding waters, as a rich inheritance to the Agriculturist. We might dwell with interest and profit on this subject—a subject which proves to the Farmer that every pebble of his farm upon which he treads, bears the impress of the Almighty's power, wisdom and goodness: that every walk we take presents abundant matter for serious study and reflection, encouraging our aspirations after truth and knowledge, and all around us affords innumerable proofs of constant dissolution and renovation. It can not be doubted that all present do admit, readily admit, these truths; yet there may be many who are feelingly alive to this perpetual contact with nature, and who know not *how to reach* the knowledge upon which we are dependent for well doing. Throughout this noble county we see a large variety of products, at one time given in profusion, at others yielded in so scant a measure as to cast a gloom if not a desponding feeling over the farmer's mind. We look back upon by-gone years and perhaps remember, or by tradition from our fathers, we may recollect accounts of crops gathered from the very fields we now occupy, proving to us a present *deteriorated* condition, as compared with the past; *or* a deficiency in our systems; *or* that our demands upon the soil are beyond its powers to endure, a charge unsupported by renovating substances appropriate to the objects desired.

† Trans. Amer. Asso. Geolg, 1843.

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These truths admitted and felt, the inquiry follows: What is the remedy? and whence shall we obtain it? The answer is now promptly given: Knowledge is the remedy, and Institutions for its dissemination are the proper places to obtain it. To illustrate the truth of this position, a contrast of nature may suffice—for instance: Africa contains about *ten millions* of square miles, with a soil incomparably more fertile by nature, where inhabited, than the soil of Great Britain. Yet Africa produces less for the sustenance of man and beast, than the British Islands, the whole area of which is but 87,000 square miles. Let it be remembered, also, that of this area thirteen millions of *acres* are waste or unprofitable. While Africa, with its rivers of unknown origin, with numberless animals and plants of giant forms: fruits most nutritious and wholesome: with a population of more than one hundred millions of human beings—this Africa, where once commerce, the arts and sciences were cradled in their infancy, deep and dismal darkness envelops as with a shroud. On the verge of barbarism, they live without knowledge, unclothed and precariously fed.

In England, or I should say, in Britain, *knowledge* is the substitute for a genial climate and an exuberant soil. True, she adds *industry* to knowledge; she spreads intelligence through the land, adding millions thereby, without increasing labor. And by these means it is that Great Britain, a small island territory, produces more for the benefit of the human race than the whole continent of Africa. We might extend this illustration, by contrast of other nations, and strengthen our proof that *knowledge* is the remedy for apprehended deterioration of our condition; that it is the sure and certain means for advancement in prosperity and happiness; but it can not be necessary to convince, though it might amuse those who listen to me.

It has been said, that knowledge is the means for our improvement; though this is true, knowledge is not to be obtained in a year, neither can its treasures be clearly and wholly discovered in the life time of man.

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But I must arrest this train of thought and return to more practical views and deductions. In connexion, however, with what has been advanced, let me congratulate you upon the events of the few past weeks, during which, the above stated and other similar truths, induced our Legislature to listen to the solicitations put forth, from year to year, from this county and from nearly every county of the State, to give us an Institution for the dissemination of knowledge, appropriate to our vocation. They have done so; and we have reason to rejoice, that the Institution is to be placed in this central region, in sight, probably, of the ground we here occupy. This, gentlemen, is one of the Institutions intended for the accumulation and distribution of knowledge, where you with your sons, grandsons, may seek and obtain facts for increasing your agricultural property, your prosperity and happiness. Does any one doubt? Does any one ask how this or like Institutions are to shed such benefits upon us? Let me point you to the way, by exhibiting a few facts. You all know that *ignorance* is a principal cause of the want of virtue; that it leads to immoral practices and to barbarous cruelties—the history of every part of the world proves this statement; the interior of our prisons and penitentiaries proves the unwelcome truth. It is equally true that knowledge, well applied, dissipates these evils. To make this more distinct, let me further illustrate it by events which occurred in Europe, when the cholera scourged their towns and cities as well as their hills and vallies. The account is taken from a foreign Journal:—"The suspicion that the cholera was caused by poisoning the wells, was univeral among the farming population—all were convinced of its truth. In one town some laborers died in consequence of taking some preventive remedies. This story, with a violent increase of the dreaded disease in a neighboring town, led the people to the notion that the wells were poisoned, which spread like wild fire. In their panic an attack was made by them on a neighboring castle, the estate of a wealthy nobleman. One of his servants, on the point of being murdered, offered to disclose something important, to save his life. He declared that he received from his employer two pounds of poisonous powder, with orders to throw it into the wells; and with an axe over his head, he publicly made oath to the truth of his statement.

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At the same time, the people in blind rage forcibly entered the houses of the land owners, every where finding *chloride of lime*, which they took for the poisonous powder, confirming their suspicions and driving them to madness. Thus excited, they committed appalling excesses: for instance—meeting a military guard of thirty men, commanded by a sub-officer, they overcame the soldiery—bound, and tortured the officer with scissors and knives, then beheaded him, and fixed the ghastly head upon a pike as a trophy. They drowned a civil officer, and finding chloride of lime in his carriage, they compelled one of his household to eat it, until blood was discharged, which again confirmed the notion of poison." Excesses more terrific than I have narrated, were perpetrated by the people in their ignorance, It was *ignorance* alone which caused these evils, for had these unhappy people known, as we all know, that chloride of lime must not be taken as a powder, internally; that when properly used it would counteract the cause of the disease they dreaded, these wicked and savage deeds would not have been perpetrated. Here you have one example, out of a long catalogue which might be given, to prove, as I have declared, that ignorance is the cause of immoral practices and barbarous cruelties. On the other hand, knowledge is *the means for improvement;* and this may be illustrated by an occurrence in this neighborhood: in fact it has probably occurred in every neighborhood. You all know that a single yoke of oxen, or a team of horses, can plow more acres in one day than can be plowed by the labor of 30 or 40 men; yet the use of oxen or horses can be had at a cost of about fifty cents per head per day, while our own less effective human power is worth about one dollar per day. Now why is this? It is because intelligence governs the mind of man, while the power of animals avails not, unless guided by man's intelligence. Just so it is among men. The truth may be perhaps unpalatable, yet we can not evade it, that the labor of an ignorant man is but little more available than unguided animal force; and that *in proportion to his knowledge, man's labor is more valuable.* Here, then, you have a truth—a fact—which reaches the farm, the action, the wealth and the happiness of each and every one of us. Now for the occurrence alluded to, as an illustration: Farmer —— having a heavy sod to break up for

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corn, determined to use three horses to his plow, by using a whiffletree which most of you know how to construct and arrange; he was an educated man from a near academy, and his work was well done. His next door neighbor, Farmer ——, was delighted with the action and power of the three horses; he determined to adopt the same method, which was new to him. Early one morning, aided by his sons, he harnessed three horses to the plow. One, a favorite gentle creature, refused to draw for the first time. The position of the horses was changed, when the refractory horse drew steadily, while the exchanged horse refused the work. Another change was made, and the third horse was equally indisposed to work. All were surprised—the horses were condemned—the work left undone for the time, and all parties left the field in disgust. A few days afterwards, the explanation was made by describing the manner of arranging his horses: he had placed *one horse* at the short end and two horses at the long end of the whiffletree, because, as he remarked, "there was more room for them!" Surely I need not explain the mechanism or the philosophy of the proper arrangement to any here present, for most of you understand it,—if there are any who do not, they may be assured that mortification, loss of time, injury to animals, and very bad farming must of necessity follow such ignorance of mechanical principles. It is clear therefore that the farmer or laborer who obtains a knowledge of science, must ever work with better economy—with greater advantage and profit than the man of less mental power, even though the latter possesses far greater bodily power. Let me give you one more anecdote, or rather fact, to prove this assertion. One of our neighbors employed a few mechanics to erect a small barn; the frame was raised and pinned together, when it was discovered that it needed to be turned a few inches to range with his other buildings—the men scattered in various directions to seek greater force to move the frame. While absent, the proprietor effected the change alone, by a combination of levers well known to him, as knowledge obtained at college. Hours might be occupied in the exhibition of illustrations, proving that the educated, well informed man ever has a large and positive advantage over the uninformed. But these important and undeniable facts, become vastly *more important*

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by the addition of another truth, which is this, that knowledge and education increase the *productiveness* of labor. This is more apparent in the work shop and factory than in the field, because in the former, the work can be measured, and the quality examined by unmistakeable rules, while on the farm we have no exact tests, until the seasons have given to us their results; and even then, the labors of the ignorant have generally been so intermixed with the more intelligent that it is not easy to distinguish between them. Yet as it is fair to compare the productiveness of labor of other classes of men, we may feel assured that the rule among them is precisely adapted to ourselves. For instance, it is well established that those who have an education, rise to a higher rank in their occupation and receive higher compensation, while the less informed too often sink, and rarely earn more than a sufficiency to sustain life. Gentlemen!—There are some striking illustrations of this truth in our own State; there are very many in our own nation. I could point you to Legislators, to Congressmen, to Senators, and to our Presidents, for honorable examples of men, who by seeking knowledge, have risen from the condition of laborer to the proudest distinctions of life;—a good and sufficient proo to each of us, that education with knowledge, in this country, is all sufficient to grasp and hold, wealth, honor and power.

And now, Farmers, let us apply these remarks more directly to ourselves. Look around you, look at the broad fields of your naturally rich county, and what a variety of products meet the eye. Let me ask, how many of you know the *elements* of any one of your products? How many of you understand the elements of your farm soils? How many of you are acquainted with the particular kinds of food appropriate to the varieties of products? And how many know the annual cost of production of any one, or even of the aggregate crops of the farm?

There may be a few,—I hope many—whether few or many who know these things, these essential facts—such men, are known as the prosperous, the prudent, the substantial farmers. I need not describe those who care not for such knowledge.

In *England*, where I was detained during the hostilities of 1812–1815—it was evident to me as before stated, that with a soil not

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originally or naturally fertile, and with a capricious climate, the land-owners carefully substituted *knowledge* to compensate natural defects and deficiencies; applying it to an area of about 87,000 square miles. Turn to sunny Africa, possessing a soil most fertile, extending over millions of acres, and with a genial climate; this vast country, teeming with human beings, produces less of food for man, by labor, than the comparatively small ocean island of Great Britain. Why? Because, ignorance, dismal and dark, covers the land: it is the absence of directing knowledge which makes the contrast. *Industry* may be equally exerted in the two countries, but, industry without knowledge leads to failure and disappointment. Let me urge you to remember this truth, that your industry without knowledge will not avail.

Gentlemen: I have dwelt on these truths, because they lie at the root of the improvement desired for your county, and for the State; they are the positive and truly practical elements which each should regard with active affection, which none can disregard without loss of estimation and loss of property. *Educated intelligence* is the only true and lasting money maker—not by tricks, not by cunning, or as it is aptly called by "men's wits," and such like dishonorable practices. No! It is by well applied knowledge to the *science* of production. Since the year 1848, this region of our State has suffered much in its wheat crops, by the wheat fly, (improperly called the weevil,) this enemy has invaded and injured the wheat farms to an alarming extent. No man has discovered a remedy, though as in other professions, so in ours, there are many pretenders. But no reliable opinion has yet been advanced. Its ravages have varied with seasons and localities, yet leaving us uncertain as to continued losses. In this uncertainty, our attention is demanded to some other product from our soils, until some remedy shall be discovered to modify or eradicate the evil of the wheat fly. What shall we substitute for wheat, is just now an important question. It does not admit of a specific reply, and can only be met by suggestions applicable to our farms, in proportion to the capital employed, and to their condition of fertility. Many have substituted barley; but if all the wheat growers adopt the cultivation of barley, we may not find a compensating

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market value for a supply suddenly increased. Prudent men will enter upon the cultivation of any new product with caution, and by degrees, hoping that with a supply, new sources of consumption will be induced and opened. An established rule, however, of economy is, that supply will follow and be created by demand. We must, therefore, seek to supply from the soil, all the wants, whether artificial or otherwise, required by the many other classes of people who necessarily depend upon Agriculturists for their sustenance. This system of supplying demand, saves us from speculative acts, hopes and fears restraining us within the legitimate scope of our vocation.

To offer a suggestion—it is proper to give you in advance, a series of estimates which have been made from reliable data, many or most of which may be new to you. Thus:

The city of New-York contains about 600,000 souls. On an average they consume and waste one half pound of flesh, each, per day; or 300,000 pounds per day. It is estimated that this consumption consists of beeves, one-half; mutton, one-fourth; swine, one-fourth; or

214 beeves,	averaging	700 lbs.	each,	is	149,800	lbs.
939 sheep,	"	80	"	is	75,120	"
300 swine,	"	250	"	is	75,000	"
Daily 1,453 animals,	weighing net,	.....			299,920	"
Say					300,000	lbs.

At this rate, the yearly consumption of the city is about

78,110 beeves,	or	54,677,000	lbs.
342,735 sheep,	or	27,418,800	"
109,500 swine,	or	27,375,000	"
Annually, 530,345 animals,	or	109,470,800	lbs. annually.

You must bear in mind this supply is only for New-York, exclusive of Brooklyn, &c. The merchants of the city, as our agents for the disposition of our products, ask from us a further supply to meet a foreign demand. This foreign demand is equal to 40,147 bbls. beef, 47,482 bbls. pork; 87,429 bbls. of flesh—equal to 17,525,800 pounds. Two-thirds of this export is probably de-

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rived from the Western States, and one-third, or 5,841,933 lbs., is furnished by this State. These figures exhibit a demand upon the farms of this State for

81,933 beeves,	or	57,353,466	lbs.
342,735 sheep,	or	27,418,800	"
122,161 swine,	or	30,540,467	"
546,829 animals,	or	115,312,733	lbs. annually,

for the use of the city and for exportation.

Look now at the stock we possess. Why, Farmers of Ontario! the entire stock of your county, of the stated varieties, amounts to 197,892 head; and of the whole State we have but 6,475,657!! Of this aggregate, only 900,000 are cows, about 180,000 oxen, and 770,000 steers, heifers and calves, 3,450,000 sheep, and 1,020,000 swine.

With these facts before you, I will not not enter farther into details. You have sufficient to show that our stock is *not sufficient* to supply the ever *increasing* demand for the single market of our chief city! Here, then, appears room for a suggestion in regard to a substitute for wheat raising. Let us breed, feed and fatten more animals than has been our custom. And I would especially commend this change to the farmers of Ontario for an additional reason. Until within a few years, Orange county and other river counties, were celebrated for the delicious butter supplied by them to the citizens of New-York. Now the demand for milk and cream, renders the use and labor of butter making unnecessary. A consequence is, that the supply of butter is now sought for in these western and from the northern counties. This new demand has enhanced the value; and you will probably find on examination, that many a family within your county lines, and more within your village bounds, are deprived in the course of the year, of good butter, at any price. You have not sufficient left for your own proper consumption.

These changes demand your careful consideration; and if they lead to a change of products, they will necessarily lead you to a change of your system of farming. Instead of arable fields, your meadows and pastures must demand a new and different treat-

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ment—a *reform* must take place, before you can breed or fatten cattle and sheep to the greatest advantage. Let me ask, have you any *permanent* pastures covered with the *most nutritious* grasses? Are your meadows or hay grounds filled with *choice grass seeds*, and are all free from weeds? I fear not; and until we change our present practices in regard to our pastures and hay fields, we must not expect full success in rearing fine cattle.

It will probably sound harsh, and may be deemed bold, for me to declare, that of all the vegetable products which we as farmers, cultivate or collect for use, none are less understood than the class of *grasses*. Is not this true? How many can tell me the number of varieties of grass which occupy your pasture lots? Who can tell me the number and varieties of weeds which hurtfully encumber the same lots? If these facts are unknown to any farmer, how can he possibly conduct his farm to the best advantage? It is well known to close observers of nature, that the varieties of grasses amount to more than 130. Our aim must be to select such varieties as are—

1st. Most suitable to the soil of our respective farms:
2d. The most nutritive for our stock:
3d. The most productive with the least labor.

To reach these objects, much consideration is needful—for instance: the Meadow Foxtail grass (Alopecurus pratensis) is early, productive and nutritious, but it does not come to perfection until two years *after it is sown;* consequently it seems more suitable for a permanent pasture or meadow, than for fields coming into a rotation of crops. So with our timothy or catstail grass, (Phleum pratense) which, though an excellent grass for hay, yields *no aftermath*, and is therefore nearly useless for pasturage. On this account we should make a stronger distinction than is customary between hay grounds and pasture grounds.

Time will not permit me to draw your attention to many important, and I fear unheeded, rules or principles for the more perfect cultivation of grasses: I must, therefore, omit all detail, though practical. Yet, at the risk of trespassing upon your patience, let me add a few important truths for your study and in-

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quiry. There are full twenty good and nutritive grasses composing a natural pasture, of which one or more comes to perfection during each successive month from spring to autumn. This is nature's arrangement, not man's. Man sows but two or three varieties of seeds, and therefore we seldom have a succession of green herbage. Here, then, you have a rule from nature. Select seed of nutritious grasses, which mature in each month of vegetation: sow abundantly, upon land free from all other seeds, and you will secure rich permanent pastures, if your soil has received its due share of attention.

I hold it to be neither expedient, proper nor profitable, to be mere imitators of other men, or other nations; because climates, soils, habits and customs differ, and are suitable chiefly to the localities where we find them. Now upon an examination of the rich, *permanent pastures* of England, we find them generally composed of the following varieties, i. e.: Meadow Foxtail, Round Cocksfoot, Meadow Fescue, Meadow Catstail, Sweet Scented Vernal, Tall Oatlike Soft Grass, Creeping Vetch, Rye Grass, Field Brome Grass, Annual Meadow Grass, and Meadow Oat Grass. These grasses yield the main spring and summer feed. During the summer and autumn, the following grasses send forth their herbage—thus: the Yellow Oat, Meadow Barley, Crested Dogstail, Hard Fescue, Rough Stalked Meadow, Smooth Stalked Meadow, Woolly Soft Grass, Red Clover, White Clover, Yellow Vetch, and Smooth Fescue. These are followed by the Yarrow, Creeping Bent or Fiorin, Marsh Bent, Coutch Grass. This list contains twenty-six varieties, adapted to British husbandry. To your soils, gentlemen, we may suggest, as a general rule, the following list:

1. Meadow Foxtail, flowers in June, early, ... 1¼ lbs.
2. Meadow Fescue, flowers in June and July,..... 2½ "
3. Rough Stalked Meadow, flowers in June and July, .. 2 "
4. Fertile Meadow Grass, flowers in July,..... 2 "
5. Sweet Scented Vernal, flowers in May and June,.... 1¼ "
6. Rye Grass, flowers in June and July,..... 5 "
7. Rough Cocksfoot or Orchard, flowers in June and July, 4 "
8. Timothy, flowers in July, ... 4 "
9. Red Top, flowers in June, July and August, ... 2 "

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10. Spear Grass, flowers in May and June, ... 2 "
11. Red Clover, flowers in June, July and August,..... 6 "
12. White Dutch Clover, flowers in July, and through the season, ... 4 "

Total,.....36 lbs.

And here let me state, that the attention of your State Society having been drawn to this interesting matter, it has taken measures to procure the seeds named, which can be procured by a communication to Colonel JOHNSON, the indefatigable Secretary.

The proportions named for seeding our grounds, are in the aggregate *thirty-six pounds per acre*—a quantity less per acre than is used by European farmers. [In England two thirds of the territory is in meadow and pasture; they sow from thirty-eight to forty-eight pounds per acre.]

Among us, a great disparity exists in the proportions of the very few grass seeds sown. In some cases, twenty pounds of Red Clover and ten of Timothy have been cast upon an acre, while the most general practice is believed to be twelve of clover with five or six of timothy. We may hope that the recent action of the State Society, with the increasing zeal of the County Associations, will at an early day determine the best practice for the several sections of our State.

Our interest and welfare are so intimately connected with the subjects I have touched, that any one might readily form a theme, by itself, for discussion and enlightenment. They press rapidly on our minds, each claiming preëminence, so rapidly, that in these days of "progressiveness," there may be a fear, reasonably entertained, that *neither* will receive the calm, quiet consideration due, so that impulsiveness and intemperate haste will mar or thwart the required improvements.

It is time to arrest the torrent of extravagant haste—of extravagant waste of time in pursuit of phantoms, useless or vicious—of extravagant luxuries, introduced by *imitating* foreign lands; imitating their follies, their habits and customs, uncongenial to our

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systems of government, of social, honest intercourse, of domestic pure enjoyment.

In conclusion, let me say to our wives and daughters here present, that we thank them for their patient attention to subjects more connected with the field practice of the farm, than with the household. Nevertheless, there is no man present, who can happily boast of a wife, but will derive profit and pleasure by discussing with her the subjects of their home employment. To our mothers we are indebted for the first impulses of virtue, for the first lessons of gratitude, prayer and praise. To our mothers are we indebted for our earliest and best education and preparation for instruction. Like a bright light in the dark pathway of life, she points the road we should travel, aids to unfold our intellects, and moulds our characters for happiness here and hereafter. It is woman who first teaches us to fear and reverence a power which has framed us with a never dying spirit; a spirit which, by well doing, aspires to the eternal rewards of virtue. It is her influence which in infancy gives direction to this spirit; in youth, encourages it to useful and honorable pursuits; in manhood, teaches the bosom to glow with social tenderness. And when age overtakes us, she gives consolation to the bending form by her tears of sympathy, her hopes of immortality, her pure and constant virtue. Well has it been said: "she is but a little lower than the angels;" and well is it for us men, that we have such helpmates, such advisers, such comforters, through our lives of toil.

We thank you, ladies, for your presence among us, to cheer us onward in our duty, and may our strength and integrity of mind be ever your shield from harm, and means for support, while your purity, tenderness and delicacy sanctify the joys of a well conducted household.

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APPENDIX.

Comparative View of the Agricultural Condition of the County of Ontario in 1850 *and* 1845.

	1850.	1845.	Increase.	Decrease.
Improved acres,	274,381	274,395		14
Unimproved acres,	90,996			
Horses,	10,313	12,625		2,312
Cows,	11,253	15,508		
Oxen,	3,188			4,353
Other cattle,	13,760	17,036		
Sheep,	149,544	257,821		108,277
Swine,	20,147	36,986		16,839
Wheat,	929,342	918,616	10,726	
Barley,	170,300	211,653		41,353
Oats,	421,666	533,062		111,396
Rye,	7,784	9,569		1,785
Indian corn,	520,917	357,747	163,170	
Peas and beans,	8,404	54,713		46,309
Buckwheat,	21,513	43,690		22,077
Potatoes,	231,684	414,090		182,406
Hay,	62,478			
Butter,	1,047,782	1,286,119		238,337
Cheese,	255,284	424,742		169,438
Clover seed,	3,161			
Other grass seed,	1,247			
Flax,	595	20,240		19,645
Flax seed,	266			
Wool,	462,955	630,739		167,784
Maple sugar,	128,599			
Molasses,				
Honey and beeswax,	30,330			
Domestic fabrics,	$13,013	$44,046		31,033
Animals slaughered,	$334,664			
Population,	43,977	42,592	1,385	

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ORLEANS.

The Orleans County Agricultural Society, at the annual meeting in 1852, resolved to hold the succeeding annual plowing match and fair at different times and places, and accordingly the annual plowing match was held at Gaines on the first day of June, 1853, and at the same time and place there was an exhibition of stallions, bulls and rams. The plowing match was well attended, and much interest was apparent. The annual fair was held at Albion on the 29th and 30th days of September; the weather was fine, and the attendance much greater than on any former occasion, as is evidenced by the amount of the receipts, which are at least fifty per cent more than any preceding year.

Orleans county is almost entirely a wheat growing county, but notwithstanding this the display of stock and particularly of cattle and matched and single horses was really fine and has not been equalled in this county either in numbers or quality. Several of our farmers have taken a great deal of pains to obtain the most approved breeds. There was also a good display of sheep, and some very fine French merinoes. Chickendom was well represented, there were a great number of lots of shanghais, and some very fine lots of dorkings, polands, and other varieties.

Our citizens within the last few years have turned their attention to the procuring and growing of the best varieties of fruits of all kinds, and as the result the exhibition of fruits this year was far superior to all our former exhibitions, and one which does credit to the fruit growers of the county. There was also a good display of root crops, domestic arts, farming implements, and of the products of the dairy, though in some departments the exhibition was not equal to some former ones; as a whole the fair was undoubtedly the best the county has had, and exhibits an increasing interest on the part of our farmers in their annual exhibitions.

The amount and number of premiums was greatly increased by the executive committee; the classes were subdivided so that a greater number of premiums could be awarded, and it undoubted-

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ly had the effect to call out many more to the fair, as also to cause a greater number of articles to be entered for premiums. The amount of premiums paid is $269 exclusive of books of various kinds awarded as premiums, the number of which was quite large.

For the two past years the society has procured a large tent, in which to exhibit fruits, flowers, fancy articles, &c., and charged an admission fee of one dime. The increase of the funds from this source is quite large.

At the annual meeting a committee was appointed to take steps to procure the incorporation of the society and to ascertain if lands could be procured upon which to erect permanent buildings for the use of the society.

Officers for 1854: President, Robert Clark, Kendall; 9 Vice-presidents; Corresponding Secretary, Jno. H. White, Albion; Recording Secretary, John G. Sawyer, Albion; Treasurer, Noah Davis, Jr., Albion.

The annual address was delivered by A. B. Bailey, Esq. Great credit is due to Oliver M. Barber, Esq., the retiring president of the society, for the able and acceptable manner in which he has discharged the duties of the office.

JNO. H. WHITE.

OSWEGO.

The Oswego County Agricultural Society have much satisfaction in reporting its continued prosperity and increasing popularity, an important feature in the profitable administration of these associations. Notwithstanding the most unpropitious weather during the first day of the fair, which was held in September, the spirits of our farmers were nothing daunted. Amidst incessant rain the stock and produce came forward and the well selected and well arranged grounds, near the railroad depot, at Phillipsville in the town of Granby, were respectably filled with objects for exhibition.

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The entries of	horses,	were,	.....	76
" "	cattle,	"	.....	78
" "	swine,	"	.....	26
" "	sheep,	"	.....	120
" "	poultry,	"	.....	22
" "	dairies,	"	.....	9
" "	fruit,	"	.....	149
" "	vegetables,	"	.....	41
" "	miscellaneous	"	.....	93
Total,			.....	684
Against preceding year,			.....	497
Showing an increase in number of entries of,			.	187

This, it is hoped, will compare favorably with other societies, in our sister counties.

The turnout of visitors far exceeded the expectations of the managers, and it was a matter of surprise that the prevailing cold rain, so cold as to show all the stock to great disadvantage, did not deter our farmers with their wives and daughters, from encouraging us with their presence and their smiles. While the memberships for this year were less than last, the single tickets sold exceeded one thousand. The second day proved well adapted to the leading attraction for which our farmers were assembled, viz: *the plowing match.* Six teams were entered and at eleven o'clock the plows were at work, and the work was well and promptly done. The ground was thronged with spectators, showing no falling off of interest in this very important branch of our society's exhibition.

The annual address was delivered in the afternoon to an interested and numerous audience, assembled in the mechanic's hall, erected on the ground, by Mr. Talmadge Delafield, of Seneca county, whose practical views, being himself a practical farmer, were highly approved and appreciated by his auditors.

In the premium list was embraced the usual number of the Transactions of the State Agricultural Society, and American Institute, but it is a matter of serious disappointment to the mana-

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gers to find that they will not be able to fulfill their undertaking in this regard. This arises from the refusal of the Legislature of 1853 to appropriate the usual number of these works to the county societies; in fact not only reducing the *Society reports* to *twenty*, but witholding *all* those of the *American Institute*, while a large number of both were appropriated to the several members of that body for private distribution. The farmers of the State have thus an additional evidence of the light in which *their* interests are regarded by their legislators, in that instance at least. For whose benefit should those works be printed at the public charge, if not for the farmers and mechanics of the State? and by whom, or in what way can they be more beneficially distributed than through the county agricultural societies? Our farmers should regard the *regular and sufficient* appropriation of these books as a *right* and not as a *boon*.

The annual meeting was held on the third Wednesday in October, when it was resolved that the annual fair for 1854 should be held in Sept., at Hastings Center, in that town; and the following officers were unanimously elected: J. N. Holmes, of Hastings, President; K. E. Sandford, of Fulton, 1st Vice-president; B. E. Bowen, of Mexico, 2d Vice-president; A. Z. McCarthy, of Pulaski, Corresponding Secretary; J. A. Place, Fulton, Recording Secretary; John J. Wolcott, of Fulton, Treasurer; Elias Thomas, Fulton, N. Snow, Hastings, T. Shepard, Hastings, Executive committee.

HAMILTON MURRAY, *President*.

J. A. PLACE, *Secretary*.

PUTNAM.

REPORT BY T. B. ARDEN, PRESIDENT.

In the progress of every art, profession or science, there will be found in each successive sphere a speaking evidence of its condition and prosperity, by a single reference to the position it has taken in the affections of the people, who foster its institutions. How gratifying must it be, therefore, to the projectors of our present system of societies, who have watched the steady accession

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of numbers to our cause, together with the developments of facts every way calculated both to forward the condition of the laborer, and to demonstrate to the enlightened husbandman, that however improved our condition, we are still groping in the dark, and his exertions need a constant increment that agriculture may be maintained upon her pedestal.

Though it may be foreign to an agricultural report, I trust it will not be deemed inappropriate as the organ of my society, to allude in their behalf to the land marks, which the hand of an inscrutable Providence has, in the still vivid past, stricken from the field of agriculture. How could our wants have been more efficiently met, than when a Downing, a Norton, a Delafield stood in our ranks? Can we imagine our body to receive a more disastrous blow, than when the voices from the spheres of skill, taste, and usefulness, shall answer to our necessities—he's gone! When experience and analogy shall fail, who so modestly, so worthily, shall stand ready to extend the hand of science to our aid? And when our whole system in its various ramifications, stands tottering for a new impulse, where will we find a Delafield both to direct and strike the blow? Yes, gentlemen, that it may be known that the farmers of Putnam county both feel and appreciate their loss, we take this means of expressing our sympathies to your honorable committee.

Notwithstanding our society, and as far as my observations have extended, the county societies, in general, are in a prosperous condition, would it not be advisable by an appeal through your body to the Legislature, during the agitation of the question of "how to dispose of uncalled for deposits in the several banking associations of our State," to relieve the several county societies of the present burthen attending the preparations of fair grounds, where the amount now yearly taken from their funds for that purpose, might be extended to the different townships for the purpose of conducting experiments, and collecting reliable statistical information; and what is still more important, it would operate to cultivate the impression that the society's officers throughout the county are not intended as fixed stars, but as satellites in their respective spheres.

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Great diversity of opinion seems to prevail on the expediency of making permanent the location of fair grounds, either in the State Society, or county associations; but few are prepared to assign any cogent reason for their position, be it for or against location; not until a trial is made therefore, will the skeptical be convinced, that some measures are necessary to more effectually secure the property of the exhibitors, and give a safe and comfortable rendezvous for those whose stock and goods are brought from a distance, and this to be in actual readiness for at least a week before the show, and to continue for the same period after the fair; this will increase the chances for an advantageous disposition of goods, and of course multiply inducements for attendance.

The third annual exhibition of our society was held at the village of Carmel, on the 4th and 5th of October, the weather being propitious, the attendance was more general in its character, than on former occasions, thereby giving evidence of a steady increase in the circle of our influence through the county.

The exhibition of working cattle was very good; and the fatted stock, which far exceeded former years, would have compared favorably with what I saw at Saratoga; in both these departments, the township of Carmel carried off our prizes.

Our sheep pens, I am forced to admit, made but the shadow of a show; now that our board of supervisors, however, have adopted measures to extend protection to this husbandry, I trust in future, we will redeem our credit.

For a county whose facilities and means are not very great for road making, and wherein "fancy men" are in a disparaging minority, our show of matched and single horses was very fair.

The tent appropriated to the display of fruits, vegetables, dairy products, and household arts, did not do the farmers or the farmers' wives as much credit as on former occasions, want of seasonable accommodations, together with a little lukewarmness, conspired to produce this effect.

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The reports of the several committees being read, the society was addressed by John Delafield, Esq., president agricultural college, his remarks need no encomiums from us, they bear their own praise; by unanimous request they were handed to us for publication; copies have been sent your committee.

The accounts of the society stand as follows:

Receipts during the year:

Balance on hand per last report	$417 85
Cash received from membership,	140 00
Cash received from sale of tickets,	130 09
Cash received from State Treasurer,	38 00
	$725 94

Expenditures during the year:

Cash paid for books, goblets, and silver knives,	$79 41
Transportation of books, &c.,	6 31
Expenses of fair and printing,	92 27
Cash paid for tents,	18 00
Premiums awarded in 1852,	2 00
Premiums awarded in 1853,	104 50
	$302 49
Balance in hands of treasurer,	$423 45

All of which is respectfully submitted.

THOMAS B. ARDEN,
President.

QUEENS.

The undersigned, Corresponding secretary of the Queens County Agricultural Society, submits the following report:

The twelfth annual exhibition was held in the village of Hempstead, on the 5th and 6th of October, on a 30 acre lot, generously offered to the society by Samuel W. Bennett, Esq. The front of the grounds was occupied by six tents, the center one presented

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a gothic front, and was 40 feet wide, and 130 long, covered with sails from the U. S. ships Independence and Constitution, loaned by Com. James Boarman, of the Brooklyn Navy Yard. On the sides of the lot, pens were constructed for cattle, sheep and swine, with a large space occupied by poultry and agricultural implements; a ring of a quarter of a mile round, for the trial of horses, occupied the center, the rear of the lot was laid out in lands for the plowing match.

The weather was extremely boisterous, the attendance on the first day not so numerous as on former occasions; this may in some degree be accounted for by having two days for the exhibition; a great proportion of visitors preferring to wait for the last day, to hear the annual address, added to which there was a slight shower and the appearance of a coming storm. The second day however, opened with a clear sky and a bright sun, the wind blowing in fearful gusts, and much apprehension was felt for the safety of the tents; but the sails of "Old Ironsides" which had withstood "the battle and the breeze" in tougher times, defied old boreas bravely, who at noon gave in, and the rest of the day was fair and pleasant. Visitors flocked in great numbers to the grounds, and appeared highly pleased with the arrangements.

The absence of the Hon. John A. King, president of the society, caused by the sudden death of his brother, was deeply regretted and much sympathy evinced for him in his severe affliction.

Cattle.—The show of cattle was not so numerous as on former occasions. The thorough bred and grade stock of Edward A. Lawrence, of Flushing, Peter C. Barnum and Thompson A. Grigg, of Hempstead, H. D. Hall and Elias B. Higbee of North-Hempstead, were highly appreciated and received premiums of silver cups. Flushing as usual carried off the prizes for working cattle; David H. Willets, and David Garretson receiving the highest premiums.

Sheep and Swine.—The show of sheep and swine was superior to last year. Judge Haviland, of Roslyn, received premiums for long-wooled, and Edward A. Lawrence, of Flushing, Stephen Robbins, of Woodbury, and James R. Burtis, of Manhasset, for middle wooled sheep. Judge Haviland, E. A. Lawrence, and Ebenezer Half of Hempstead, first premiums for swine.

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Horses.—This year's exhibition was far superior to last, and established the character of Queens county of raising a stock second to none in the State. Precisely at 12 o'clock on the second day, the Judges took their stands in the center of the ring, when seventy-five of as fine horses and mules as the State could produce, gaily cantered round the course, from the stately stock of "Cassius M. Clay," to the diminutive Shetland, only 36 inches high; a noble sight it was, and well appreciated by the hundreds surrounding the ring. The studs and mares were of the following pedigrees; Engineer, Eclipse, Henry, Trustee, Messenger, Cassius M. Clay, Morgan, American Eagle, American Star, American Boy, Telegraph, St Lawrence, George Washington, Black Hawk, Duroc, Belbrino, Mambrino, Abdala, Alliance, Ab Del Kader, Napoleon, Hamiltonian, State of Maine, Bellfounder, Kossuth, Kemble, Jackson, Forrest Hunter, and Jefferson.

"Thus does *our* horse excel a common one,
In shape, in courage, color, pace and bone."

Jackson Nichols, of Flushing received the first premium for "American Eagle," Alexander Townsend, Glen Cove, for "American Star," Jacob H. Willets, Flushing, for "Kossuth," and Valentine Willis, Westbury, for "State of Maine," Leonard Mott, Manhasset, for the best matched horses raised in the county, and Judge Haviland, Roslyn, for the best matched horses, owned six months in the county. 10 silver cups, $20 in cash, and 19 volumes of books were awarded.

Mules.—The mules excited general admiration; one pair was marked like zebras. The use of these animals for farm purposes is just beginning to be appreciated in this part of the State, and much is due to the late Hon. John S. Skinner, for removing a prejudice against their use, in his address delivered before the society in 1845.

The first premiums were awarded to James P. Smith, of Herrick, and William Dykes, of Newtown.

Dairy.—Twenty-two samples of butter and cheese were examined by the judges, ten of them made by girls under twenty-one years of age, and considerable anxiety was manifested by the fair contestants for silver butter knives, to know the decision.

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The following are the statements of the successful competitors:

Statement of Mrs. S. Armstrong, North Hempstead.

This butter was made from the milk of five cows, fed in clover pasture; the milk strained into tin pans; cream gathered with a wooden ladle; churned in an oak churn; freed from milk with the same ladle; half a pound of table salt to six pounds of butter, well worked in; morning is the best time for churning in warm weather; think it keeps best in a stone vessel.

Statement of Miss Sarah T. Brogan, Newtown.

This butter was made from the milk of four cows, fed on grass only; strained into glass pans; salted with "Ashton's factory filled;" use neither saltpeter or any other substance; well worked from the butter milk; an early hour in the morning the best time for churning, and a stone vessel the best in which it can be kept.

Statement of Miss Amanda M. Layton, Westbury.

Ten pounds of butter made from fifteen quarts of cream; drawn from four cows in four days; strained into tin pans; when slightly changed skimmed into a stone pot, until enough is gathered for churning; churned in an oak churn; taken out into a wooden bowl, and worked till free from milk; salt is then put in according to taste.

Bread.—This was a new article added to our premium list, the competitors to be girls under twenty-one years of age. Nineteen entries were made, from all parts of the county, and the quality showed that their education had not been neglected in this important part of house-keeping. Many were the bachelors waiting round the entry tent, to see the young rosy cheek girls come tripping forward with their white baskets, and still whiter napkins, enclosing loaves of all sorts, high loaves, flat loaves, twists and turnovers, crusty, crummy, wheat and rye.

Silver butter knives were awarded to Miss Sarah Jane Hendrickson and Miss Rosamond Pettit, of Hempstead. A loaf of unfermented bread was highly spoken of as the best exhibited,

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but passed by the judges. It was white, light, well baked, and tasted good, and had the following article and recipe attached:

Loaf of unfermented bread made by Miss Emily Troward, Hempstead.

The usual way of making bread is to raise the dough by the process of fermentation, by which a portion of the nutriment of the flour is destroyed to produce the carbonic acid gas necessary to make the dough rise; also the natural sweetness of the flour is in a degree destroyed by the decomposition that takes place during the process of the rising of the dough, and the sweetness or sugar contained in the flour is changed into alcohol, and this volatile spirit flies off whilst the bread is baking, and this important part of the flour is lost.

In making bread in the unfermented way, there is no loss in the nutriment or sweetness of the flour whatever. The carbonic acid gas needful to raise the dough, is produced by the ingredients added to the flour, and not by a decomposition of a portion of the flour, as in the other way. These ingredients are muriatic acid (spirits of salt) and carbonate of soda, (or rather bicarbonate of soda,) the mixing of which together, after the carbonic acid gas has been produced to raise the dough, leaves behind only common salt.

The making bread with yeast is a tedious and laborious process; making it in the unfermented way is accomplished in a few minutes, and with scarcely any labor. Made in this way it is also cheaper, as a considerable deal more bread can be made from a certain quantity of flour by this method, than the other, and the ingredients used in producing the carbonic acid gas are very inexpensive.

Recipe for making unfermented bread.—Take of flour 3 lbs.; bicarbonate of soda 3 teaspoonsful; mix thoroughly together in a dry state; then take one and a half pint of cold water, (some flour will require a little more,) and add to it four teaspoonsful of muriatic acid, (or spirit of salts,) stir it up with a wooden spoon, and mix it as quickly as possible with the prepared flour, using a wooden spoon or spatula for the purpose. Put the dough thus

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made into a baking tin previously heated, and bake in a moderate oven. If possible, the dough should be put in as soon as it is made, but if that cannot be, the dough should be covered with a wet cloth till it is put in.

Poultry.—The display of poultry was large. Every variety almost were exhibited, from the tall Shanghai to the small bantam. Judge Haviland exhibited two splendid pair of white swans. Mr. Richard C. McCormick, jr., of Woodhaven, had the greatest variety, but by some unavoidable delay failed to get his poultry upon the ground until about one o'clock, when the judges had made their decision, and mostly left the grounds. The first premium was given to Judge Haviland, and a discretionary premium to Mr. McCormick.

Vegetables and Roots.—A fair display in this class, D. F. Manice, of Oatlands, having 34 varieties, Wm. L. Laing, of Lang Syne, 26 varieties, and George Hulst, of Newtown, 18. The show of potatoes large; several specimens of seedlings, warranted not to rot. The sweet potatoes of Capt. Jeremiah Briggs, Jamaica, were very large, which on boiling proved of fine flavor, and mealy. Beets, carrots, and turnips too, large; which, together with cabbages, showed that many of our market gardeners required new and better seed; many were hybrids. The silver cup was awarded to Richard Parnell, gardener to D. F. Manice, of Oatlands.

Fruits and Flowers.—The season had been too wet for fruits on Long Island; apples a failure. We doubt if any individual has exhibited so great a display of various fruits as D. F. Manice, of Oatlands, at any county fair in the State. He had 170 varieties of pears, 14 of grapes, 12 of oranges, besides nectarines, apples, lemons, bananas, &c., occupying 250 plates, and several of the specimens were superb. His display received the silver cup. Capt. J. Briggs, of Jamaica, made an excellent display of pears and quinces. Several very pretty floral designs were exhibited. Miss Elizabeth A. Seaman, of Hempstead, received the first premium for a very chaste design, "Flora's Temple."

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The ladies' department showed their usual skill in embroidery, needle work, painting, &c.

Agricultural Implements.—Messrs. Mayher & Co., of Jamaica, added material interest to the exhibition by a large display of farming utensils, of their manufacture. G. F. Jerome, of Hempstead Branch, exhibited several excellent thrashing machines, mowers and reapers, fanning mills, &c. Clement's Vermont churn would have received the first premium, but it came too late.

Ploughing match.—Eight entries were made; all the work was well done. The first premium was awarded to Samuel Pettit, Hempstead; Ruggles, Nourse & Mason's plough, Eagle D.; the second to Patrick Brennan, Jamaica, Mayher's Eagle plough.

Grains, &c.—The crop of corn has this year been above the general average; fifty to eighty bushels have been gathered on farms usually yielding thirty to fifty; the quality sound, with but few nubbins. Super-phosphate of lime has been used extensively, and with satisfaction; the crop planted on ground so manured looked rank, and of a fine dark green color. The ears exhibited were fine specimens of what can be produced upon Long Island soil; they speak loudly in favor of a better system, as a general thing, among those who cultivate our soil. The rich land of the west cannot beat, in quality, that which was exhibited. And this corn is mostly grown upon iust such land as the 15,000 acres of the barren and waste Hempstead plains.

Of the small grains, the show of wheat and rye was good, some samples of rye weighing over 60 pounds the bushel. Mr. Henry T. Hewlett, of Manhasset, exhibited two-rowed spring barley, which weighed 52 pounds the bushel. The agricultural products generally, exhibited that increased care and attention had been paid to raise better seed and better crops than formerly, and the general appearance of the visitors, that the agricultural interests of Long Island were in a prosperous condition.

Though farming holds out no decoying hopes of large fortunes to be *speedily* realized, it furnishes, if pursued with economy and industry, in the first place a certain shelter, with unfailing means

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of comfort and independence to those who apply their intellect as well as diligence in cultivating the soil. In what other business can man be so well employed in promoting individual happiness and national welfare?

At 3 o'clock p. m., the secretary took his place on a stand erected in exhibition hall, and in a few remarks explained the unavoidable absence of the president of the society. The duty therefore devolved on him to introduce the orator of the day, Professor James J. Mapes, editor of the *Working Farmer*, and formerly a school boy in the village of Hempstead.

The Professor then came forward and delivered a highly practical address, which was listened to with deep attention. The following extracts are given:

"It is with particular pleasure that I find myself before an Hempstead audience; for I knew your fathers, was educated in your village, and left it thirty years ago. Then every inhabitant was known to me, and some of the most pleasurable recollections of my life refer to that period. In those days I need not tell you that the farmers about Hempstead had not advanced as now, and her horticulturists could then point to a few trees bearing sour cherries, in front of the parsonage, by the Rev. Mr. Hart, as the only fruit trees in the village. Well I remember, also, that the honored father of your president was then the leading man of the county. He gave character to Long Island, to his native State; and when abroad, as Minister for our government, to his native country, until the name of Rufus King has become a household word, by which we stimulate our children to patriotism. (Applause.)

On the north side of Hempstead Plains lived William Cobbet, the English statesman, and whatever may be your opinion of him as a man, you cannot but thank him for having made Queens county the first spot in America where the ruta baga turnip was grown. (Applause.) The introduction of this root has caused a rapid increase in the growth of others, until now, the root crops of our country, at least in many districts, are scarcely less valu-

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able to us than are those of England to her farmers. From reading a former address by your president, I learn that Long Island, and particularly your county, was a wheat-growing district, and that thousands of cattle raised here found their way to the New-York market. Now it must be evident to you that in every bushel of wheat parted with, the soil was robbed of its phosphates and many other matters necessary to successful cultivation; that in every ox, (carried off in the shape of bones,) the ground has parted with eighty pounds or more of phosphate of lime, and while much of your soil is replete with organic matter, it is now deficient of phosphate of lime, potash, soda, chlorine, and sulphuric acid. It is impossible in an address of an hour to refer to the remedies by which these raw materials, from which both vegetables and animals are formed, are to be restored to the land. But they can be restored, and at a much less expense than that to which you now resort for a supply of manures.

"The agricultural press of the day contains currently the necessary instructions, and I am glad your Society has secured the means of placing them before you, in the shape of valuable book premiums.

"As to the importance of agriculture, you need no counseling from me. Your annual products are said to reach two millions of dollars per annum. To the country at large the subject of agriculture is of the first moment; for our merchants are but the factors of the farmers; the large cities their storehouses; and the luxuries enjoyed by the inhabitants arise from a brokerage collected on the imports for the farmer's use, and the exports of their productions. Nine-tenths of all the available capital of the world is engaged in agriculture; and in our country seven-eighths of the inhabitants are farmers, or directly sustained by agriculture."

"As to the importance of fairs you can have no doubt; for here the farmer may see the products of other farms. Here he may see the improved tools yearly invented for the use of agriculturists, by a judicious selection from which one third the expenses of cultivation may be avoided. (Applause.) He may here learn by

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interchange of communication what is meant by 'high farming;' he may meet those who have raised 100 bushels of shelled corn to the acre, and learn from them what means they have adopted for replacing the missing constituents of their soils. He may also learn that deeply tilled and subsoiled land will protect its crops from drouth. He may learn that land so thoroughly prepared requires a less amount of fertilizing material to give a maximum result; he may know by comparison which of his crops are raised from hybridized seed, and procure such as are true to their sorts. He may learn also, that where the atmosphere circulates through the soil, when deeply disintegrated, it furnishes all the conditions for rendering both the organic and inorganic constituents of his fields available for the use of vegetables; that the moisture carried by the soil will be deposited by the cold surfaces of a disintegrated sub-soil; that sub-soiled meadows never run out; and that unlike those that have been shallow plowed, they will not cause the tillering plants to cease to tiller."

"I call your attention to the value of root crops. Mr. Webster has said, and with truth, that two successive failures of the turnep crop in England would bankrupt the country. Her wool and manufacturing interests would be prostrated while the supply of mutton consequent upon this crop would scarcely be replaced by other meats. The cattle-raiser can, with comparatively few acres of land, supply himself with root crops for winter feeding, and present his animals fatted in the spring. Carrots are of immense value, both to the dairyman and to the farmer. One bushel of carrots, with one bushel of oats, will create as much flesh as two bushel of oats,—not that the carrots contain the same amount of nutriment, but that they enable the animal to appropriate all the constituents of the oats for flesh making. For milch cows it is still more important; for by gelatinizing the contents of the stomach, which is done by the pectic acid contained in the carrot, the food is entirely digested and its ultimates appropriated; and the milk and butter from cows fed partly on carrots, even in mid-winter, is equal in quality to that raised in May from clover pasture. A horse never has the heaves when fed in part on carrots; a sleek coat and loose hide being the invariable results of

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such feeding. Nor will his excretia contain the shells of undigested oats; even the hay undergoes exact appropriation, lesser quantities producing greater results."

"May I call your attention to some necessary improvements in the formation of your compost heaps? The compost heap should be made above the level of the ground, and composed of alternate layers of the result of the stable and your swamp muck, prepared by the salt and lime mixture, the methods of performing which have been so often published. The "salt and lime mixture," when properly made, will decompose this muck, rendering it pulverulent, and when composted with the results of the stable, it has the power to receive the escaping ammonia, and to retain it for the use of plants."

"At the lower end of the compost heap a cask or cistern should be sunk in the ground, supplied with a pump, so that the fluid drainage of the heap may be pumped back on top of it twice a week or oftener, and when no such drainage exists, water should be thrown into the cistern, until the pile arrives at that point of saturation which will regularly supply the cistern. By such treatment, the soluble portions from every part of the mass would find their way through every other part, thus rendering it homogeneous. The process of decay will be more rapid and without *fire-fanging*. One cord of compost so made, is more than equal to several cords taken from the barn yard, while the quantity may be eighteen times as great. To this cistern may be added the soap-suds, and other fluid wastes of the house. Soils requiring potash may have it conveniently passed through all the composts used, availing of the decomposing power of this alkali before its final destination to the soil."

"It often occurs that the soil is nearly barren from the absence of one or two constituents. One of the most familiar instances of this kind is with soil deficient of the soluble silicates. Thus farmers, that are not practical, sometimes raise large crops of oats without sufficient strength of straw to sustain them; and this is entirely due to the wants of soluble silicates. Many soils are capable of producing full wheat crops by the addition of the soluble phosphates, being replete with all the other necessary constit-

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uents. Others are deficient in potash only, and to such, unleached wood-ashes supplies the necessary amendments. The spent ley of the soap boilers contains large amounts of soluble silicates. The "salt and lime mixture" will supply chlorine, soda, and lime, three constituents often missing from the soil; and the farmer who holds in one hand an analysis of the crop he desires to raise, will require but little knowledge of chemistry to be able to select the proper amendments that will insure him a full crop."

"The plain lands belonging to this town require but an analysis and a judicious selection of the proper amendments, to render the town of Hempstead the richest town of its size in the State of New-York. (Applause.) Your immense tracts of this land, if sold and thrown into general cultivation, would yield an amount entirely sufficient to educate every child born in the county, or to be born hereafter, while the increased population and consequent increase in the value of these lands, would reduce taxes to the lowest rate possible."

The Professor went on to remark on the mulching of fruit trees, and other matters of practical farming. At the conclusion of his address the speaker retired, amid enthusiastic applause, and Edward A. Lawrence, Esq., of Flushing, moved "That the thanks of the society be offered to Professor Mapes, for his scientific and practical address, and the secretary solicit a copy for publication." This resolution was seconded by Judge Haviland, and carried unanimously.

The list of premiums was then read by the Secretary. Soon after the people left the grounds, the articles were removed, and ere nightfall but little beside the empty tents remained of the annual county fair.

The premium list consisted of 23 silver cups, 12 silver butter knives, $223 in money, and 240 volumes of books, to which was added 24 volumes of the Agricultural Report of the Patent Office, from the Hon. Charles Mason, Commissioner of Patents.

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Receipts and expenditures:

The amount received from all sources, including the balance of previous year, was		$1,248 48
Paid in premiums,	$451 07	
Expenses of fair and incidental expenses,	378 54	
Balance in treasurer's hand,	418 87	
		$1,248 48

The winter meeting was held at the Court House, on Tuesday, Dec. 6th, when a premium of eight dollars was awarded to Townsend B. Pettit, of Hempstead, for the best crop of winter wheat, which was accompanied with the following statement:

Statement of Townsend B. Pettit's crop of winter wheat.

The land was sown in rye in 1851; twenty-five bushels of ground bones applied per acre. In 1852 it was planted with potatoes; fifty loads of horse manure was applied per acre, and yielded a profit of $75 per acre. The ground was plowed once after the removal of the potato crop, and 100 lbs. Peruvian guano applied to the acre. The grain harvested in July, 1853, and yielded 39 bushels 3 pecks per acre.

Value crop:		
39 bushels 3 pecks, at $1.50,		59 62
Expense of cultivating per acre:		
Plowing and sowing,	$2 00	
Guano and labor,	2 75	
Cost of seed and interest on land,	14 00	
Harvesting and thrashing,	2 50	
		$21 25
		$38 37

The affidavit of surveyor, and persons who secured, thrashed, and measured the crop, accompanies the statement of Mr. Pettit.

The annual meeting was held at the court house, Hempstead, on the 3d of December, 1853.

Officers for 1854.—President, John A. King, Jamaica; six Vice-Presidents; six Managers; Corresponding Secretary and Treasurer, John Harold, Hempstead; Recording Secretary, John H. Seaman, Hempstead. JOHN HAROLD, *Secretary, &c.*

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RENSSELAER.

In compliance with the requirements of statute, the executive committee of the Rensselaer County Agricultural Society, presents the following report of the condition and acts of the Society, for the year 1853, with the doings of the annual meeting of the present year.

At a meeting of the executive committee on the 15th of Febr. 1853, the following resolution was offered by B. B. Kirtland:

"*Resolved*, That a premium of $20 and diploma be offered for the best reaping machine, and a premium of $20 for the best mowing machine; the same to be exhibited and worked under the inspection of a committee of this Society, at such time and place as the committee shall fix upon; the machines to be afterwards exhibited at our next annual fair, to entitle them to draw the premiums awarded; competition open to the world."

The resolution was adopted, and B. B. Kirtland, Richard J. Knowlson, Martin Springer, Isaac T. Grant, and Benjamin Starbuck, were appointed the committee.

The committee subsequently adopted the following scale of points to guide them in their decision, as to the merits of the several machines which might be exhibited for premium:

1	2	3	4	5	6	7	8			
Cost of machine.	Simplicity of Construction.	Durability.	Effective Power; or Power required, for a given amount of work, including attendance.	Rapidity of Action; or amount of work performed in a given time.	Quality of work, and the manner of leaving the grass or grain.	Facility of management; including time and room required for turning.	Adaptation to uneven surfaces, and to cutting at different heights.	Aggregate merit.	Standard of perfection.	Quantity of work as compared with hand labor.
Perfect at 10	Perfect at 10	Perfect at 15	Perfect at 15	Perfect at 15	Perfect at 15	Perfect at 10	Perfect at 10		Perfect at 100	Perfect at 25

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The 13th of July, 1853, was the day appointed for the trial of the machines.

In making up their report of the result of the trial, the committee say:

"The entries were as follows: H. L. Emery, Ball, Parsons & Co., of Rensselaer, (Manny's patent), Ransom, of Rensselaer, (Ketchum's patent), E. Cook, of Ohio, and J. M. Wright, of Chicago, with the automaton rake attached (Atkin's patent); the two latter more particularly as reapers. H. L. Emery's, Ball, Parsons & Co., and Ransom were all that presented themselves as competitors for mowing."

The machines were tried on meadow of tolerable smooth surface, the crop timothy and red top, generally heavy, and in some instances lodged; belonging to Stephen Kimball, one and a half miles east of Albany; lots of one acre each were laid out, and the owners of the machines directed to cut each of their lots (designated by being drawn from a hat) in a practical way; that is, in a way that farmers could expect to work their men and horses on their own farms.

The committee regarded the trial as instituted more particularly to test the practical operations of the machines, in the quality of work they were capable of performing, rather than to try them by any scientific rules, in regard to draught, &c., hence the dynamometer was not used in the trial.

The mowers cut their respective lots in the following time, to wit:—Ransom, (Ketchum's patent) in 57 minutes; Ball, Parsons & Co., (Manny's patent) in 1 hour 5 minutes; H. L. Emery's, in 1 hour, 44 minutes. The reapers that appeared for competition were B. M. Parsons & Co., (Manny's patent), and Emery & Co., (Seymour & Morgan's patent); they were tried in a field of rye, belonging to Mr. Dings, about three miles east of Albany; the crop was rather light; one acre was cut by each machine, as follows, to wit: Ball, Parsons & Co., in 55 minutes; Emery & Co., in 44 minutes.

Having examined the machines and the work performed by them with reference to the table, the committee decided that

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Ransom, of Rensselaer, was entitled to the first premium of $20 for Ketchum's machine as the best mower; and that Emery & Co. of Albany, were entitled to the premium of $20 for Seymour & Morgan's machine as the best reaper.

"Manning's machine was the only *convertible* machine, that is, adapted to both mowing and reaping, used in the trial; and although the committee could not give it the highest rank in either capacity, they are free to say, that if it is desired to combine the two purposes in the same machine, they do not see how it could be much improved."

The committee say in conclusion: "The trial held under our supervision attracted deep interest, and was largely attended by farmers in the vicinity, as well as by several from a distance; and the lesson was here learned by many which will be put into profitable practice on their own farms another year."

The annual cattle show and fair of the society was held at Lansingburgh on the 13th, 14th and 15th days of September. Owing to the rain, or threatened rain at the commencement and through the entire continuance of the exhibition, the display of live stock and the products of the farm and garden, domestic manufactures, specimens of mechanical skill and industry, and all things else that usually contribute to the value and attractiveness of such display, was much less than was justly anticipated; still, through all these adverse circumstances, there was much to cheer and gratify the friends of the society. In most of the departments there were specimens equal to the best of any former exhibition. The rain caused the plowing match to be abandoned. The annual address was delivered on the last day of the fair, by B. P. Johnson, Esq., secretary of the State society; and was an eloquent and singulary appropriate production; and was highly gratifying to a very large and attentive audience. The premiums were then awarded to the successful competitors at the exhibition.

At the annual meeting of the society on the 24th of January, 1854, the treasurer read the following report of the receipts and expenditures of the past year, and the present condition of the finances of the society:

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The whole amount of money received during the last year, and since the last annual report, is	$1,338 39
The whole amount of disbursment during the same period, is	1,336 69
Leaving a balance in the hands of the Treasurer, of	1 70
	$1,338 39

In order that the society may be informed from what sources the money has been received and how it has been disbursed, the table below has been prepared:

Received from annual members	$438 00
life "	130 00
a donor already a life member,	7 00
Treasurer of the State of N. Y.,	180 00
storage at the society's buildings,	50 00
booths for the sale of refreshments at the annual fair,	94 00
sale of gate tickets,	439 39
Making,	$1,338 39

DISBURSEMENTS.

Cash due the treasurer at last annual report,	$70 64
paid interest on purchase money of the society's fair ground,	10 09
Cash paid premiums,	613 00
taxes,	33 85
Secretary and treasurer's salary,	150 00
printing bills,	99 00
insurance on $3,700,	37 00
police clerks, gate tenders, helpers and carpenters' bills, &c.,	226 46
for flags,	5 75
for emergencies,	20 00
for freight on books,	1 00
printing bill last year,	43 00
Carried forward,	$

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Brought forward,..... .....$	
blank books and stationery,.....	11 75
for 101 diplomas,.....	15 15
balance in the hands of the treasurer, ...	1 70
	$1,338 39

There was awarded at the last annual fair cash premiums,....	$885 00
Twenty volumes of Transactions,.....	20 00
Fifty diplomas,.	50 00
There are unpaid premiums due exhibitors amounting to, ...	448 00
Other claims for services, &c., estimated at,.....	50 00
The Society's debt for balance of purchase money of fair grounds, is, ...	2,150 00
Interest already accrued about,.....	200 00
Making,.....	$2,848 00

Most respectfully submitted,

A. VAN TUYL, *Treasurer.*

A resolution was adopted that immediate and energetic measures be gone into to cancel the debt of the society, created by the purchase of the fair ground and buildings, and a committee consisting of one or more in each town of the county was appointed to solicit subscriptions.

There was only one competitor for field crops, David Coonradt of Brunswick, to whom was awarded the highest premium, $6, for the best crop of beans, 30 bushels and six quarts on one acre and 12 rods of land, at a cost of $14.97, and which sold for $35.50; net profit $20.53.

The election for officers for the present year was then held, and the following persons were chosen:

For President—John J. Viele, of Troy, and eighteen Vice-Presidents.

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Executive committee—George Vail and John Kerr, of Troy; Richard J. Knowlson, of Sandlake; Joseph Hastings, of Brunswick; Sidney D. Smith and John M. Mott, of Lansingburgh.

Treasurer—Abram Van Tuyl, of Troy.

Secretary—Wm. Hagen, of Troy.

The annual address to the society was then delivered by the President elect, John J. Viele. It was earnest, eloquent and appropriate.

WM. HAGEN, *Secretary.*

ROCKLAND.

REPORT OF ISAAC SLOAT, PRESIDENT.

The tenth annual fair of the Rockland County Agricultural Society, was held at the New City on the 5th and 6th days of October, and was attended by an unprecedented concourse of people. The youth of the county, of both sexes, were there in all their strength and promise.

It affords me pleasure to be enabled to say that the society is in a highly prosperous condition. In proof of which, it is only necessary to add, that the amount received from members during the past year, compared with any previous year, shows an increase of nearly 30 per cent.; and the amount of premiums paid, shows a corresponding increase.

The influence of the society upon the county generally, cannot fail to attract the notice of any close observer. The dwellings, tillage, fences, crops, stock, indeed, every thing connected with husbandry throughout the county, bears evidence of a NEW IMPULSE.

A gradual departure from the *way our fathers did*, is every where perceptible. Only a few years ago, it was thought a waste of time and money to attempt to raise a crop of wheat. It is no unusual thing *now*, to hear of from 20 to 30 bushels being produced from the acre in various parts of the county.

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Here is a great improvement brought about in a very few years by some cause or other. What is the cause? Why, the organizing and sustaining an agricultural society, stands first and claims the greatest credit, because it has been the *means* of introducing a new state of things.

Formerly, scarcely a farmer was to be found who ever looked into an agricultural work or paper; they were nearly to a man, *down on book farming*. Scarcely a farmer can be found now, who does not read some work on agriculture, or who is not influenced by those who do read; and hence, they think, are enabled to talk —talk intelligently, if not scientifically, on agricultural subjects —and so they manage; and this is the cause of the improvement.

The annual address, which was plain, practical, and peculiarly impressive, was delivered by Mr. Isaac M. Dederer, a practical farmer of the county.

The managers of the American Institute honored the society by an invitation to visit their annual fair and cattle show, which was cheerfully and thankfully accepted, and a delegation of twelve were appointed to respond to the invitation.

Officers elected for 1854.—Isaac Sloat, President, Blauveltville; Erastus Johnson, Spring Valley, Daniel Tompkins, North Haverstraw, James S. Haring, Blauveltville, and Jacob J. Eckerson, New City, Vice-Presidents; A. E. Suffern, Cor. Sec., Haverstraw; Saml. W. Canfield, Recor. Sec., Piermont; Christian A. Debaun, Treasurer, Nanuet.

John S. Norris's statement of crop of Wheat.

The following is a correct statement of a crop of wheat grown on a portion of my farm in this town, being at the rate of thirty bushels per acre; a sample of two bushels was exhibited at the fair, held at the city last October.

The piece of ground on which the wheat was raised, measured $1\frac{3}{4}$ acres; the quantity of wheat measured $52\frac{1}{2}$ bushels, weighing 63 lbs. to the bushel. The wheat is known as the Mediterranean.

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The land on which the crop was grown is a clayey loam, and the previous crop was potatoes.

Last fall the ground was plowed, 20 loads of barn yard manure put on, then plowed and harrowed, four bushels of seed sown and harrowed, then sown with timothy and clover, and again harrowed. The following is the actual cost of the crop to me:

To 20 loads of manure, plowing, harrowing and sowing,.	$11 00
To cradling, binding and carrying to barn, ...	2 00
To thrashing 52½ bushels at 10c. per bushel, including cleaning, ...	5 25
To interest and taxes on 1¾ acres,.....	12 25
	$30 50

The crop is worth as follows:

52½ bushels of wheat at $1.50 per bushel,.....	$78 75
700 bundles of straw at 3c. per bundle,.....	21 00
	99 75
Cost, ...	30 50
Profit, ...	$69 25

JOHN BLAUVELT'S STATEMENT OF A CROP OF RYE.

A statement of particulars as to the land, quantity, &c., upon which a crop of rye has been raised by me, and gathered in July, 1853.

1. The quantity of land was four acres and three-hundredths, by actual measurement by chain, and quantity computed by John J. Wood, surveyor.

2. The condition of the soil at the commencement of cultivation for the crop was good.

3. The previous crops were corn and oats. No manure used in the cultivation of these crops, except ashes upon the hills of the first corn crop.

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4. Upon sowing the rye crop the oat stubble was plowed under, as usual, and I spread twenty loads of rotten manure over about three acres and one quarter of the land, and then harrowed and rolled the land after sowing. The manure used was the common barn-yard.

5. The quantity of seed sown was four bushels and three pecks of rye, of the produce of my farm the preceding year.

6. The rye was sowed the first week in September, the previous fall.

7. The crop of rye, when thrashed and cleaned, produced by actual measurement, ninety-one bushels, from the quantity of land as stated above—weighing 56½ pounds to the bushel.

8. The expense of cultivation was as follows:

First plowing in of oat stubble, two days one team and hired man, expense estimated at $2 per day,	$4 00
Second plowing, one day and a half,	3 00
Harrowing half a day,	1 00
Rolling land one quarter of a day,	0 50
Sowing land one quarter of a day,	0 25
Drawing manure, team and man two days,	4 00
4¾ bushels of rye sown, at 75 cents per bushel,	3 65
	$16 40

ST. LAWRENCE.

In obedience to the requirements of the statute, this society begs to submit the following report:

That this society was organized in 1852, and has successfully maintained its organization, and with increasing prospects of usefulness. The effect and utility of this society cannot be doubted. The very marked difference between the exhibition of stock at the fair of 1852 and 1853, showed most conclusively that our farmers were made sensible at the former fair of the superiority of thorough bred stock over native, and we are happy to report

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that at the last fair there was a highly creditable display of stock animals, either of pure bloods or of high grades.

The high latitude of this county, and its immediate water communication with the grain producing districts of the great west, render the production of grains a secondary interest to our farmers, and it may well be doubted whether its production is even remunerative, in consideration of these causes, and of the difficulty of maintaining lands in good condition under constant culture, at the prices of labor maintained for several years.

The farmers have therefore very generally turned their attention to the raising of cattle, horses, sheep to a moderate extent, and to the business of dairying. A comparatively moderate breadth of grain is sown, though its production is most generally confined to supply the consumption of the farmer himself.

Besides the grains usually raised in this State, and which are here produced of good quality, the attention of some of our farmers has been turned to the production of hops. They may be produced here in great perfection, and where the requisite knowledge and capital have been applied to their culture, their cultivation has been quite profitable. In this connection, the society begs to refer you to the report upon farms accompanying.

The great and leading production of this county, however, is grass. The soil is wonderfully adapted to pasturage, spontaneously producing white clover in great luxuriance, while the meadows of the county are remarkable for their fine crops of timothy and clover.

The number of cattle in the county exceeds that of any other county in the State, and at the fair of this season a large number of creditable specimens were exhibited of Durhams, Ayrshires, and Devons, some of excellent size and form.

We have no means of ascertaining the productions of our dairy during the past season, but consider it larger than ever heretofore. There is one railroad passing from this county, commencing near its center and passing out to the east. At the Madrid

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depot of this road, there were exported this season as follows in butter and cheese:

1853.	January,	311	packages butter.	68	of cheese.	31,568 lbs.
	February,	449	do	..	do	38,754 do
	March,	235	do	94	do	27,792 do
	April,	111	do	17	do	12,037 do
	May	767	do	128	do	68,348 do
	June,	1,292	do	951	do	171,603 do
	July,	1,188	do	665	do	148,425 do
	August,	1,029	do	1,074	do	159,025 do
	Sept.,	2,161	do	1,529	do	245,245 do
	Oct.,	2,047	do	1,152	do	281,205 do
	Nov.,	1,959	do	864	do	273,596 do
	December not returned.					

This railroad has *eight* depots in the county, but the Madrid depot is probably one of the principal ones for the export of these articles from the eastern and middle portions of the county; the western portion seeking other channels to market to a considerable extent. The increase in the exportation of butter alone from this one depot, of 1853, over 1852, is 91,397 lbs., which is regarded as a fair index of the growth of the dairy interest in the county. By reference to the accompanying report it will be seen what encouragement the society has extended to dairies independent of the premiums and encouragement at the annual fair.

Incident to the growth of grass and cattle, large numbers of horses are reared in the county, which seek the eastern markets annually. They are generally of good size, figure, and muscle, and command good prices.

The crops of the past season were generally much lighter than usual, particularly oats and spring wheat, by reason of the great drought of the season.

The annual fair was held on the society's grounds at Canton, on the 15th, 16th, and 17th of September. The first day was inauspicious, by reason of heavy rains, and there was no attendance. For this reason the fair was continued the third day. The

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attendance was large, and there were six hundred and nineteen exhibitors. The grounds comprised ten acres, well watered, with good shades and high fences. The society erected a large tent, 70 feet in diameter, and two large halls which were filled with the handiwork of our farmer's daughters, with the exhibitions of the dairies, and with the specimens of mechanical skill, and grains.

The fair was creditable to the county, and appeared to give general satisfaction.

The lands in this county are constantly and largely enhancing in value. Until recently, no proper outlet has been afforded our produce, but the railroad has now brought the market to our doors, and the effect is manifest not merely in the greater prices for produce, but in the quicker return, in the value of lands, and in the general prosperity of our farmers.

The finances of the society are as follows:

To cash brought down from last report,....	$811 84	
" received from the State,.....	170 00	
" from members and admissions, ...	1,595 32	
		$2,477 16
Paid in premiums and expenses,...		1,940 33
Balance in the treasury, ...		$595 83

Officers elected for 1854.—Uriel H. Orris, Massena, President; Jonah Sandford, Abel P. Morse, and Emery Alexander, Vice-Presidents; Henry G. Foote, Secretary; and Ebenezer Miner, Treasurer.

Respectfully submitted,
H. VAN RENSSELAER, *President.*

H. G. FOOTE, *Secretary.*

REPORT OF COMMITTEE ON FARMS AND DAIRIES, SEPT., 16, 1853.

To the St. Lawrence Agricultural Society:

Gentlemen—The undersigned committee, appointed by resolution of your executive board, to award the following premiums, to wit:—

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For the best conducted farm of two hundred acres, or upwards, exclusive of woodland,..... $30
For the second best, do,..... 25
For the best conducted farm of one hundred acres or upwards, and less than two hundred acres, exclusive of woodland,..... 30
For the second best, do,..... 25
For the best conducted farm of fifty acres or upwards, and less than one hundred acres, exclusive of woodland,..... 30
For the second best, do,..... 25
For the best conducted dairy of twenty cows, or upwards, there is hereby appropriated the sum of..... 25
For the second best, do,..... 20
For the third best, do,..... 15

beg leave to report:

That in accepting the trust reposed in them, they understood by the terms of their commission, that in the examination of a farm, they were to consider with reference only to the manner it was being conducted to produce two results; the greatest profit in immediate return, and in keeping up the state of cultivation and enhancing the value of the land; that in the conducting of a dairy, they were to consider the skill evinced in the selection of animals, the most economical method of keeping them in *good* condition, and of giving the greatest returns per cow.

Your committee visited the various farms and dairies entered, during the last of June, that they might examine the grass crop especially, and all other crops on the ground, and the dairies when in their best condition; they again visited such of them as they esteemed necessary, during the last of August, to learn particularly the modes of conducting the various farms, and to observe the results with more accuracy, than could be obtained on their first visit.

In the opinion of your committee, the great interest and wealth of this county, consist in the raising and feeding of grass, and they give it as the result of their observation in the discharge of

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these duties, that those farms which are principally devoted to the raising of grain, are deteriorating and losing in value, far more than all the profits which can be made from the raising of grain, while stock farms which raise only grain and roots for their own consumption, are producing two and three times the quantity of hay, much better crops of what grains they do produce, while the land is constantly enhancing in value and productiveness; while on the other hand, your committee were informed by a grain raiser, and one of the competitors, that a certain piece of land once produced one hundred and fourteen bushels of corn to the acre, which your committee regret to report as now producing little else than sorrel; and such your committee feel constrained to report is the tendency, and will be the undoubted result of the grain farms which were entered for competition; for which reason no grain farms have been awarded a premium, their productiveness being entirely below the grass farms, their expenses heavier, and their condition tending to exhaustion.

Before entering upon the discharge of their duties, your committee caused a series of interrogatories to be prepared, embracing the whole system of agriculture as practiced in this county, and required from the competitors strict and concise answers thereto, whereby they were able to elicit full information on all subjects, and to compare the modes pursued at their leisure, comparing cost and production, and confirming the same by their actual inspection.

In awarding these premiums, your committee extract from these several reports, so much thereof as they deem not in general practice in the county, and which your committee, by their inspection, consider of practical importance.

Upon farms, they award the first premium of the first class to the farm of Henry G. Foote, in Canton, thirty dollars. The second premium of the same class they award to Wm. B. Wheelock, of Depeyster, twenty-five dollars.

From the report of Mr. Foote, they abstract as follows: "That in taking up pastures, they are cleared of all stones and stumps,

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and thoroughly drained and laid down to meadow as soon as rotten, in such a manner as to be mowed by machinery.

"In taking up meadows, plow from ten to twelve inches deep, with a Michigan sub-soil plow, two plows on one beam; cut turf from four to five inches, and sub-soil from six to seven inches, turned above the turf. In plowing, take the longest way of the field, and time is gained in turning; break parallel to main drains at right angles, as near as may be to pipe drains, and in plowing to this depth, each furrow acts as drain beneath the sod, the salts are raised, the turf is entirely covered by a new soil, the ground is mellow and ready to receive stock without exhausting it by cropping. If the meadow is clay land, plow in the autumn, and leave for action of frost, leave till well drained and dry in the spring; sow to spring wheat, well harrowed, picked and rolled, harvest and stock with timothy, harrow and bush, and early the next spring, roll and pick; if the soil be light and dry, and will answer for winter wheat, plow as before, and sow late in August, or early in September; if it winter kills, stock on the grain in the spring, else stock after harvest, as before, but if topped dressed with farm manures, stock with the seeding. Do not put hoe crops on meadows.

"The farm is drained on its east line by the Grass river, on the west, by a large brook with high bank; on the south, it discharges freely by right angled drains in the road ditches, and is drained by upwards of five hundred rods of open and stone drains. One man, in early spring, will throw out from eight to twelve rods per day of ditch, depending upon the depth required, if for covered drain, at a cost of eight cents to one shilling per rod; these drains vary from two to three feet in depth, are filled to one foot of the surface with cobble stones covered with pine slabs and turfs replaced, grass downwards. The cost of filling these drains, depends much upon the distance the stone may be drawn, but consider it somewhat more expensive than the digging. The open drains are from three to four and a half feet broad at the top, depending on the declivity of the land; in depth, from two and a half to three and a half or four feet, depending on circumstances, usually from twelve to eighteen inches broad,

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at the bottom. The kind of drain depends on this farm, 1st, upon the quantity of water to be discharged, if it run parallel to a descent, tapping springs, and receiving large quantities of surface water, it is an open drain: but if the drain interfere with the general direction taken in plowing, mowing or raking the land, or mar the appearance of the lot, it is covered and made quite large. If it simply tap springs, it is a covered drain. There is a third kind or pipe drain, in use on this farm. Their general direction is at right angles with the main drains, and at right angles with the dead furrows in plowing, as near as may be, but following also in leading to the main drains any depressions there may be in the surface. They are usually dug in the autumn, after breaking up, but during the first spring after stocking, the meadow is again examined, and if water killed in any places, more drains of this kind are laid. They are the width of a spade, about two feet deep, and are made by inclining two flat stones against each other, and filling to one foot of the surface with small cobbles, invert the turf on the stone and fill. Their cost is trifling. The dead furrows of the headlands, are connected with the dead furrows of the field, unless the headland be upon the street or a main ditch, (the latter of which does not often happen, as these lots are laid and plowed) when the dead furrows of the field are cut across the headland and its dead furrow or furrows to the drain or street ditch. The headlands usually have two half dead furrows instead of a dead furrow, made by geeing about and throwing the outside furrows from fences or ditches, both of which furrows are thus drained."

The manures of this farm are carefully saved and composted with the product of about one hundred horse stalls, annually purchased; composting to destroy foul seeds, and are used in laying down or top dressing meadows. The meadows are top dressed in the last of May, with from thirty-five to fifty pounds of plaster per acre, applied by a simple machine, costing about four dollars, at an expense of labor of two and a half cents per acre."

The result of which, in the opinion of your committee, by inspection both before and since haying, was not less than three

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tons per acre, on all meadows which Mr. Foote has taken up in this manner, comprising one-half of the meadows of the farm, and a remarkable heavy crop, for the season, upon the remainder.

The mowing on this farm is done by machinery, at a cost for cutting and spreading for labor of from six to seven cents per acre, and by Mr. Foote's report he estimates that he obtains enough more hay per acre, over hand mowing, to pay for the entire haying.

Your committee cannot too strongly recommend to farmers to prepare their meadows for, and to use the mowing machine—cutting and spreading very much cheaper, in better season, less liable to be injured by rain, and a greater yield.

The farm of Mr. Wheelock is conducted in a neat and systematic manner—is beginning to show good returns—the meadows show too much cropping, but are now improving under grass farming, wants more drainage, the fences and buildings in good order, and the meadows well laid down. The product, per acre, of grass on the farm to which we have awarded the first premium, is very much more than that to which we have awarded the second premium; we attribute this difference to *subsoil plowing*, to thorough drainage, and to special manures, and particularly to the *deep subsoil plowing*, which we cannot too strongly recommend.

Your committee have no hesitation whatever in awarding the above premiums over any other farms of this class entered for competition.

On the second class farms your committee have awarded the first premium to Richard Bennett, of Russell, thirty dollars; and the second premium to James Carton, of Massena, twenty-five dollars.

The farm of Mr. Bennett is new, the great body has been cleared within six years—the meadows are reclaimed, alder swamps flowed annually, well put down, and yield largely—is a stock and dairy farm, all improvements thoroughly done, his system of husbanding manures and of culture, is well calculated to

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keep his lands up, and although the farm is new and presents a somewhat rough and unpromising appearance, your committee regard the *management and conduct* of the farm as much better than many farms much longer reclaimed, and which presents to the casual observer a better appearance.

Your committee award the first premium of the third class, to Solomon Walroth of Canton, $30, and the second premium to Ethan Everest, of Pierpont, $25.

And they feel it their duty, before dismissing this class, to report particularly upon the farming of Mr. Walroth. The farm consists of sixty acres and it is scarcely too much commendation to say, that forty acres are cultivated with the care, tilth and cleanliness of a garden, and that the balance is pasture and wood land. There is a hop yard of between eight and nine acres in a beautiful state of cultivation, which, it is estimated, will produce the present season but little if any over one half of the usual crop, by reason of the drought, but from offers already submitted for the crop, it is estimated that the yard will produce twenty four hundred dollars. In default of barn yard manures, Mr. Walroth uses a composition of house ashes, plaster of paris, guano and common salt, applying salt at the rate of one barrel per acre, and 100 lbs. of guano, composted with equal parts of ashes and gypsum; applied once in three or four years, and cultivated in. His other crops are cultivated with equal cleanliness and look remarkable well. His meadows, though not natural grass land, produce a heavy crop, and the farm is thoroughly drained.

Your committee award the first premium for the best conducted dairy to

Dwight Spencer, of Lisbon,..... $25

For the second best to

Abel A. Hall,..... $20

For the third best to

Ransom Tuttle, of Canton,..... $15

The dairy of Mr. Spencer is devoted to cheese, no stock raising, except swine. The method adopted by him for manufacturing what your committee esteem a very uniform and superior article, is as follows:

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"Begin to milk at six o'clock in the evening, place the milk in vessels set in cold water—stands till morning—then milk about sunrise—takes an hour to milk—strain this milk into the night's milk, prior to which we skim the night's milk, saving cream for family use, and the balance we warm and dissolve in the milk, and work into it, mixing the two milkings. We warm the milk to about 84° to 86°, and then put in the rennet, enough to curdle the milk in 40 minutes—then cut it with a curd cutter—then settle a little, dip off whey to heat for scalding—then heat the curd to 100° by turning on hot whey at three separate times—let it stand 30 minutes—then separate whey from curds by a strainer laid into a sink, the whey running off into a conductor and the curd remaining. Keep stirring the curds till dry enough to salt; use 2½ lbs. common salt to 100 lbs. pressed cheese; mix thoroughly by hand—hoop and press 24 hours, in a lever press, turning once while in the press, take from the press, color slightly with otter prepared in lye—dress with whey oil—young cheese daily, older cheese every two days, or oftener if the weather be damp. Bandage after coloring when the cheese comes from the press."

The dairy of Mr. Hall is devoted to butter, and your committee are satisfied, that the product exceeds that of most cheese dairies. The product on hand was a superior article, the mode of manufacture is as follows: Milks at six o'clock, morning and evening; sets in ten quart pans on open racks, in a cool room; stands until sour but not curdled—skims—churns—washes thoroughly in the churn, salts by hand a little less than one ounce per pound, of good Ashton salt, and works by machinery slightly and packs at once into firkins with a heavy maul.

With regard to the second and third premiums, your committee commend the mode of wintering cows, adopted by these gentlemen, as far better than the mode pursued by Mr. Spencer, and for this reason should have awarded them the higher premiums, save that Mr. Spencer somewhat excelled them in quality and quantity, and in his conveniences for business.

Your committee had the pleasure of examining several other dairies, all of which were extremely well conducted; some of

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them with better conveniences for business, and others with cows in higher and better condition than the successful competitors, but which were, nevertheless, wanting in some respects deemed essential.

The committee took much pains to obtain the opinions of the dairymen with whom they conversed, relative to the values of the respective breeds of cattle for the dairy; and while they ascertained that no pure bloods were used for such purposes, the dairymen universally agreed, that their crosses with improved cattle were very much superior to native breeds, in quality and quantity of milk, in tendency to fatten and keep in good condition on the same feed, and, in quantity of beef, when fattened.

Upon all of the farms visited, we have found the great body of the stock well housed in winter, and the farmers universally testify, that it is saving from 25 to 33 per cent. in forage, and a like gain in the superior condition of the animal, over wintering stock in open yards.

In conclusion, your committee beg to testify to the hospitality and kindness with which their brother farmers everywhere received them, and to the cheerfulness with which they exhibited their systems and accounts.

J. E. PERKINS,
E. M. SHEPARD,
E. B. HASKELL.

QUESTIONS TO COMPETITORS FOR FARM AND DAIRY PREMIUMS.

1. What number of acres in your farm?
2. How many acres in woodland?
3. How many in pasture?
4. How many in meadow?
5. How many under the plow?
6. Into how many fields is your farm divided?
7. How much rail fence have you; and its cost per rod?
8. What number of rails in height?
9. How do you secure such fence, with stakes and caps, with wire, riders, or without security?
10. How much stone fence, if any, have you; its size, and its cost per rod?

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11. Is such stone fence or wall laid upon the ground or in a trench, and if so, what depth? What other fences have you, and describe them?

12. Do you poke, hobble, or blind any of your horses or cattle to keep them from jumping or throwing fence? And how many?

13. Have you any drains, and how much in rods? How much of it is open drain? How much is covered drain?

14. What is the size and depth of your open drains?

15. Same question as to your covered drains?

16. Of what material and in what manner do you make your covered drains?

17. What are the respective costs of open and covered drains, and how do you determine which kind to use?

18. Do you use plaster or any other manure on your pasture grounds, and if so, what, at what time, and in what quantity per acre do you apply it?

19. Do you suffer Canada thistles, and burdocks, to grow in your farm, and how, and how often do you eradicate them?

20. Is there plenty of living water at all seasons in your pastures, and proper shades? If no water, how do you water your stock?

21. How much pasturage do you allow for one cow, for ten sheep, for a horse, or an ox?

22. Do you pasture sheep with cows, or with cattle?

23. Do you pasture young cattle with your cows?

24. How many head of cattle, horses, or other stock, do you pasture upon this farm?

25. Explain to the committee, whether in getting fuel, you cut standing timber, or first take windfalls, or if you clear the land cleanly as you remove the fuel, and point out to the committee the place where you obtain fuel.

26. How much hay do you cut per year on this farm? how much per acre? do you sell hay from this farm or feed it on the farm?

27. How many meadows have you on this farm?

28. How many years since *each* meadow has taken up and stocked down?

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29. How often do you plow and stock you meadows?

30. Do you use plaster upon your meadows in the spring, and if so, how much to the acre? do you apply it by hand or machinery? What is the cost per acre of its application, and the cost of the machine?

31. Do you top dress your meadows with any manure, and what kind of manure, and how many wagon loads to the acre?

32. Do you roll your meadows every spring?

33. Do you pick them of all the small stone *every year*, carefully, and do you have the droppings of cattle and horses carefully knocked in pieces on your meadows each spring?

34. Do you cut each year, after haying, all briers or sprouts that may spring in the corners of your fences, or elsewhere on your meadows?

35. Do you allow cattle to run upon your meadows at any and what season of the year?

36. What is the cost per acre of mowing your hay? And do you do it by machinery or hand labor? What is the cost of spreading your hay per acre? What is the cost of raking your hay per acre? What of securing and housing? Finally, what does it cost per acre to secure your hay crop, exclusive of team labor, including the labor of yourself and each person engaged, at current prices, including the price of board at two shillings per day?

37. State the number of your hay barns, and whether you stack hay, and how you top your stacks.

38. If you mow by machinery, what machine do you use, its cost, and will it cut more or less grass to the acre than the scythe, and how much more or less?

39. In laying down or stocking your meadows, what kind and amount of seed do you use to the acre?

40. Have you a roller for your meadows?

41. In case any portion of your meadows is drowned by water, or produces wild grass, do you take any and what action to remedy it?

42. Do you draw wood, or logs, or otherwise team over your meadows in winter, with sleds?

43. In taking up your meadows how deep do you plow?

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44. How long do your keep meadows under the plow before you again stock down? describe your treatment and course of crops?

45. What is your depth, generally, of plowing?

46. What grains do you usually raise? how many acres of each this season?

47. State your manner of preparing land for corn, your depth of plowing; your manner of manuring it, whether you apply guano, plaster, or ashes, to the corn hills, when and how much.

48. Can you protect your corn from crows, and birds, and how?

49. Do you use the cultivator in corn, or a plow? And which do you esteem the best, and why?

50. Do you hill your corn in hoeing, and how much?

51. How much corn do you raise to the acre?

52. State how you harvest your corn; whether you save the corn stalks—state how you feed the stalks.

53. What is the cost per bushel of raising corn?

54. State the number of acres you now have; state the number of days' labor spent on said field this season in preparing, planting and cultivating, &c.

55. Do you raise wheat? and state how you prepare the grounds for it; depth of plowing; how you prepare the seed to make it clean; state the general management of the crop—both of spring and winter wheat.

56. State the average amount of crop.

57. State what disposition you make of the straw, and how you convert it into manure.

58. State the average cost of raising.

59. Give a full statement of your manner of raising other grains now growing on your farm; the cost of producing each kind; the average amount of crop per acre; the cost of raising each; and in what manner you dispose of the grain and straw.

60. State your mode of thrashing grains.

61. Do you keep a thrashing machine and horse power?

62. State your experience as to the comparative merits of thrashing by hand or horse power.

63. What amount per acre of seed do you use of the several grains raised by you?

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64. Do you weed your grains in any and what stages, to eradicate kale, daisies, or other foul weeds?

65. Have you a kitchen garden? and state the various vegetables and fruit raised by you in it, and the quantity of ground contained in the garden.

66. Have you a fruit garden? If so, state the kinds of fruits raised by you, and quantities.

67. Have you an apple nursery? If so, state the number of trees; whether they be seedlings or grafts; whether your nursery is in a grass-plat or meadow, or whether you cultivate the grounds, and how much, and with what grains or vegetables. State your mode of manuring, and what kind of manure.

68. Do you raise roots for your stock? How many acres of roots have you on the ground? What kind are they? What is your average yield of ruta bagas, carrots, or mangel wurtzels, per acre? what is the cost per bushel for raising and storing? How do you store turnips to keep them from rotting in the winter? How much is your per diem allowance of roots to your various kinds of stock?

69. Do you devote this farm to stock or grains? If stock, state what kind, and how many of each, and what you raise stock for.

70. State your mode of wintering your stock, your mode of stabling or housing, how much and what of your stock is stabled. State your number of stalls for cattle and horses, whether you use cut or long feed, whether you feed roots or grain, and how much of each per head per day, your mode of watering. State the comparative cost of wintering housed or unhoused stock. State the blood or kinds of each of your respective stocks.

71. State the cost of labor for wintering your stock per head. State the quantity of manure you obtain per head from your stock. State whether you buy special manures, or any other, and how much.

72. State the winter management of your stock fully. State your care and management in breeding time. State your summer management of your stock. State your management of calves; of lambs; of colts as you may raise.

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73. State your rate of increase of stock since the first of March. State your sales of stock, of wool, and farm products, since the first of March. State whether you feed cattle, and if so, your management, and the best breeds for feeding, and the profits thereon.

74. State the management of your cows in summer and winter, in feeding and milking. State your mode of cheese making, and butter making, show the committee your dairy, if you keep a dairy as such, and detail to them fully your management. State the annual income per cow from your dairy. State the cost of making butter and cheese, allowing interest on your capital, and proper wages to yourself and family.

75. State whether your cows are of any particular breeds, and what breeds. State your experience as to the best breeds for dairy. Do you keep a bull, and what breed?

76. Do you raise horses? State your management of your mares. State your mode of wintering colts first winter, the same as to subsequent winters, your time and mode of breaking colts; at what age you put them to full work. State the mode of keeping your team horses in winter; also, in summer.

77. If you use oxen, state if you prefer them to horses, and state the reasons of your preference. State the mode of keeping your ox team in winter, same in summer.

78. If you raise hops, give the committee a full detail of your management and curing of the crop; its average yield; its average value; the cost per pound of raising, and all details.

79. Do you raise swine? If so, state the breed. State your management of the same, the mode of rearing, of fattening, the amount of pork you raise yearly, its cost per pound.

80. State the kind and quality of poultry you raise, the number of fowls, and varieties you winter, where they are kept, how and where wintered, your mode of feeding, what amount of eggs you sell; same of poultry.

81. State the number and size of your plows. How many ox carts or farm wagons have you? Have you a stone boat? Have you a horse cart? State your tools and implements. Have you a set of carpenter's tools, or how many; and what?

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82. State to the committee any other matters you may please as to the management of bees, if you keep them, their profit; same as to sugar, or any other subjects connected with your farm management.

The full replies hereto are to be recorded, and sworn to by the competitor.

CLASS 1ST.—H. G. FOOT'S FARM STATEMENT.

Have in my farm 250 acres, of which 40 are in woodland, 75 in meadow, 35 under the plow and the balance 100 acres in roads, river, yards and pastures. The farm is divided into 15 enclosures exclusive of yards; there are about 4½ miles of fence of which 145 rods are wall, 80 rods of turf fence and the balance of rail and board fence: the permanent fences are from 7 to 8 rails in height, staked and capped mostly, but in this respect depending upon their exposure to winds, and whether they be used simply to divide meadows or to enclose pastures The cost of the rail fence staked and capped is 34 cents per rod and labor, or without stakes and caps it is 21 cents and labor. The walls are laid on old foundations, well settled, lay new walls in trenches from one to two feet deep, depending upon the soil and its dryness, the cost of wall now laid is one dollar per rod for laying; it is four feet at the base, five to six feet in height if whole wall, or 4½ for half wall; the turf fence is six feet at its base, six feet in height, stands between two open drains, the one 4½ feet wide at the top, sloping to two feet at the bottom, and the other is two and a half feet with a slight slope to the base; the cost of this fence including both drains, was to me 40 cents per rod, but it was constructed with and upon the embankment of an old drain. The cattle are restrained by fences only.

The farm is drained on its east line by the Grass river, on the west by a large brook with high bank, on the south it discharges freely by right angle drains in the road ditches, and is drained by upwards of five hundred rods of open and stone drains. One man in early spring, will throw out from 8 to 12 rods per day of ditch depending upon the depth required, if for covered drain, at a cost of eight cents to one shilling per rod, these drains vary

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from 2 to 3 feet in depth, are filled to one foot of the surface with cobble stones covered with pine slabs, and turfs replaced, grass downwards. The cost of filling these drains depends much upon the distance the stone may be drawn, but consider it somewhat more expensive than the digging. The open drains are from 3 to 4½ feet broad at the top, depending on the declivity of the land; in depth from 2½ to 3½ or 4 feet, depending on circumstances; usually 12 to 18 inches broad at the bottom. The kind of drain depends on this farm, 1st, upon the quantity of water to be discharged, if it run parallel to a descent, tapping springs and receiving large quantities of surface water it is open drain; but if the drain interfere with the general direction taken in plowing, mowing or raking the land, or mar the appearance of the lot, it is covered and made quite large. If it simply tap springs it is covered drain. There is a third kind or pipe drain in use on this farm. Their general direction is at right angles with the main drains, and at right angles to the dead furrows in plowing as near as may be, but following also in leading to the main drains, any depression there may be in the surface. They are usually dug in the autumn after breaking up, but during the first spring after stocking, the meadow is again examined and if water killed in any places more drains of this kind are laid. They are the width of a spade, about two feet deep, and are made by inclining two flat stones against each other, and filling to one foot of the surface with small cobbles, invert the turf on the stones and fill. Their cost is trifling. The dead furrows of the head lands are connected with the dead furrows of the field, unless the headland be upon the street or a main ditch, (the latter of which does not often happen, as these lots are laid and plowed,) when the dead furrows of the field are cut across the headland and its dead furrow or furrows to the drain or street ditch. The headlands usually have two half dead furrows, instead of a dead furrow made by geeing about, and throwing the outside furrows from fences or ditches, both of which furrows are thus drained.

Keep foul weeds from the farm by weeding grains, by the use of the scythe in summer, and by clean seed. The farm is watered by a river, by a brook, five wells, and several springs; and esteem the pasture well watered with pure running water, and have

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plenty of shade. Allow for a cow or ten sheep in pasturage from one and one half to two acres, depending upon the season and the state of the pasture. Have by way of experiment, pastured one cow upon three-fourths of an acre of good land, and mowed from the same land the same season three-fourths of a ton of hay. Do not pasture sheep with cattle, nor cattle of different ages with each other except cows; do not pasture stock cattle with cows; assort my stock cattle placing the heaviest and lightest in separate lots. Have on this farm sixty-two head in pasture and four horses at hay.

In obtaining fuel when not obtained by clearing, wind-falls and wasting timber is used. Shall cut in my judgment this year from 150 to 165 tons of hay, at from two to two and one-quarter tons per acre on the average; consume all the hay on the farm. Have six or seven meadows, and take them up as a rule whenever in an ordinary season they produce less than one and one-half tons per acre. The meadows this season are very uniform, but very few if any single acres will produce this season as low as one and one-half tons, a great number of acres will exceed three tons. Use each spring on every acre of these meadows thirty-five to fifty pounds of plaster, the latter is the general rule; it is applied by machinery, at a cost for the labor of a small boy; from two and one half to three cents per acre, and one horse. The machine was made on the farm except four dollars of expense. Top dress such places as require it, on the meadows in the autumn, with twelve to fifteen wagon loads of compost; roll the meadows every spring, if the grass roots have raised by the frost, at that time, pick before the roller, and carry off on a boat standing on the top of the roller; the driver picks the width of the roller on the unrolled land, as the roller passes along; roll no stones into the land; cut all foul stuff if any when haying; sometimes allow cattle to run upon the meadows in the month of September; the cost of mowing and spreading once, is for manual labor five cents per acre; it is done by machinery; it is raked by horse; in the early part of the season it is usually cocked and turned out the next day; it is in the latter part of the season often pitched from the winrow; rake the meadows twice, costing eight to nine cents for

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labor in the aggregate per acre; have offers to house my hay for labor at eight cents per ton; it costs more than that except for several barns standing on the meadows. The cost of haying an acre is much varied by the weather, and the quantity cut on the acre and by the distance drawn. One ton only on an acre, requiring no extra spreading, cut late, housed in a barn on the meadow, requiring but one to mow, should be cut, hayed and housed, weather fair, for twenty-five cents, and dear hay at that, by reason of the interest on the capital against the small return. Have eight barns of various sizes for hay: sometimes stack; make field mows of about fifteen tons; cover with a well battened board roof; hay wastes but little by this method. The mowing machine used is Ketchum's patent, had of Howard & Co. of Buffalo, costs $110 and transportation, on the best of meadows will cut 300 lbs. per acre more than the mowers usually cut; with one span will cut 15 acres per day, with two span will cut twenty acres per day.

In stocking, use timothy, eight quarts on lowland; on upland add four lbs. clover; poorly prepared light land requires more stock, but the more manure the less stock is required. Keep a roller; if any part of a meadow drowns, drain at once with a pipe drain; sow fresh stock, manure or plaster; do not team on meadows with sleds or otherwise; have lanes, or enter the lots from the public road.

In taking up old meadows, plow ten inches deep, with a Michigan sub-soil plow—two plows on one beam; cut turf from three to four inches, and sub-soil from six to seven inches, turned above the turf. In plowing the longest way of the field time is gained in turning; break parallel to main drains, at right angles as near as may be to pipe drains, and in plowing to this depth each furrow acts as a drain beneath the sod, the salts are raised, the turf and manures thereon are entirely covered by a new soil six inches deep, and the ground is mellow and ready to receive stock without exhausting it by cropping. If the meadow is clay land plow in the autumn and leave for action of frost; leave till well drained and dry in the spring, sow to spring wheat, well harrowed, picked and rolled, from the 1st to the 15th of June, harvest, then stock with timothy, harrow and bush, and early the next spring

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roll and pick; if the soil is light and dry and will answer for winter wheat, plow as before and sow late in August or early in September, if winter kills, stock on the grain in the spring, else stock after harvest as before—but if top dressed with manures should then stock with the seeding. Do not put root or hoe crops on meadows which can be laid down in this manner. The above is my depth of plowing meadows; my experience is that in both wet and especially dry seasons 40 to 50 per cent more of corn and grass can be raised to the acre than by light plowing. It makes a remarkable difference in corn. Do not plow in that manner in taking up to lay down meadows or pastures first broken, then plow with a single heavy plow—(after having removed all stumps and stones, if practicable,) to seven or eight inches in depth—am guided as to whether the plowing be done in the autumn or spring by first the soil, and second by what is intended for first crop. If rough and clay soil, break in the autumn and crop with oats and roots. Seed heavy with oats, say four bushels; the next season reverse the crop, placing roots where the oats stood, and the oats where the roots were raised; for roots raise mangel wurtzels, ruta bagas, carrots and some potatoes; next or third season stock after wheat, preparing the surface to be mowed by machinery. If the corn should be wanted as first crop, take the soil having little or no clay, break in the spring to avoid the wire worm, but avoid corn the second season unless the ground is well manured with long manure to shun this insect—proceed much as before, and drain thoroughly before stocking, and the spring after stocking as described with reference to treating meadows.

The grains raised on this farm are only incidental to prepare grounds for grass, and are never raised after ready for meadow; the grains are oats, wheat, corn and barley—principally oats on grounds subjected to a rotation, wheat if only one crop—regard oats as very exhausting, but use the crop to rot the turfs; have but two acres of corn, have seven acres of wheat, have three acres of barley, have fifteen acres of oats, have three and a half acres of ruta bagas, carrots, and one and a half acres of potatoes.

The manner of preparing corn land when not raised on the turf is plowed in autumn if clay land, if proper corn land in the

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spring; manuring thoroughly, before planting harrow, ridge, plant across the ridge—use the steel tooth cultivator both ways, hoe three times, cut at the root, stook, cure and husk, at a cost heretofore of $26.90 per acre; average crop exceeding 80 bushels shelled corn past two years per acre. Have less corn than usual this season: manure in the hill once in the season with a compound of equal parts of good house ashes and plaster of paris half a gill per hill. Fed my stalks last season cut. The cost after crediting for stalks and pumpkins is 23 cents per bushel; on a return of 80 bushels, without such credit, it costs 33 cents, and of the expense per acre $13.90 is for barn yard and special manures and their application.

Do not raise much wheat—sow this season seven acres of winter wheat—the ground taken is a pasture heretofore over-cropped—first remove all stones within reach of the plow, then plowed as early as convenient, say in May and June, harrow and cross plow eight or ten inches first of August, harrow, cover with a compost twenty loads per acre, well spread; sow last week in August to middle September, plow in; plaster in spring at rate fifty lbs. per acre—sow to soiling clover—harvest and turn the clover over in early autumn, when not laid down for meadow.

Raise some spring wheat—usually sow it on turf without much manures, or if it be used to stock with, then manure from twelve to twenty cords per acre; plow deep and sow late, have sowed as late as the 12th June: think it is less subject to rust.

Harvested no winter wheat this season—spring wheat crop runs usually from eighteen to twenty-five bushels: clean seed by sieves—casting and washing. Feed the straw—usually cut—consider the profit quite small, usually on wheat.

Raise oats and other grains in the usual mode of the country; oats cost me from six and a quarter to ten cents per bushel: but do not think there is any ultimate profit whatever in raising grains save to prepare grounds for grass. Thrash by machinery—keep a machine and power—prefer hand thrashing.

Use in sowing wheat one and a half or two bushels per acre—oats three bushels. Weed my grains of all foul weeds. Have a

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kitchen and fruit garden—the latter has two or three acres, the former three quarters of an acre.

Raise strawberries, melons, cucumbers, asparagus, potatoes, beets, mangel wurtzel, onions, turnips, squash, corn, salsify, &c. Have apples, pears, plums, crab-apples, cherries, currants, gooseberries, rrspberries, &c. in fruit garden.

Have an apple nursery of 5,000 trees, all grafts, cultivated with roots. Manure in autumn with compost.

Raise roots for stock; have from three and one-half to four acres ruta bagas, and one-half acre wurtzels. Average yield from 800 to 1,200 bushels of these roots, and the same of carrots, which latter crop failed this season. My root crop is below the average this season, by reason of the fly and grasshoppers. Crib my turnips in cellars, same as corn cribs, and ventilate the cellar till quite severe weather. Feed one peck per day, and upwards, as the creature will bear.

Devote the farm to stock. Do not raise stock, but purchase stock to winter, or to mature and fatten. Wintered last winter about a hundred head, mostly cows. Have stabling for about seventy head, and sheds for the remainder. Use both long and short feed. Water at pump. Costs thirty-three and one-third per cent. less for feed for housed than unhoused stock. The cost of labor and board for wintering stock, is 15 cents per day per head for cattle. Obtain about four wagon loads per head of raw manure. Buy five or six tons of plaster annually, and the product of about one hundred stalls. Do not breed stock, save a few colts. Winter the mares on cattle oats, and a little grain daily. House young colts on earth or a well covered floor, and do not let them out the entire winter.

The sales of my farm since March 1st to June 1st, have a little exceeded two thousand dollars. Have not fed cattle.

Do not keep a dairy except for family use. Feed milch cows in winter a plenty of good hay and a peck of oats daily.

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Do not put horses to full work until six or seven years old. Keep team in stable at grain and hay all seasons. Use horses; have no use for oxen.

Do not raise swine save for family use. Keep two or three varieties of fowls; the Cochin Chinas and two varieties of Shanghais. Raise mostly for family use. Winter in a good cellar, well ventilated. Feed with coarse grains.

Have five or six plows, largest sizes mostly. Have two farm wagons and sets harness, double and single. Have a stone boat, mowing machine, plaster sowing machine, root cutting machine, straw cutter, horse power, thrasher; have a set carpenter tools and work bench, horse rake, wheel barrow, planting machine, &c., &c.

Do not keep bees nor manufacture sugar.

H. G. FOOTE.

August 29, 1853.

DAIRY FARM OF MR. D. SPENCER, LISBON.

Keep forty cows. Make cheese; do not make butter. House when begin to fodder. Fodder up in the morning with hay; turn out at ten for water and exercise; stable them towards night and feed again, and do not feed again till next morning. Feed long feed; feed straw sometimes, and when feeding straw do not use hay. One man will attend till towards spring 50 or 60 cows. Cannot tell quantity manure made. After calving, feed my cows ground grain till grass; prior to that time as above stated.

Begin to milk about six o'clock in the evening; place the milk in vessels set in cold water; stands till morning; then milk about sunrise; takes an hour to milk; strain this milk into the night's milk, prior to which we skim the night's milk, saving cream for family use, and the balance we warm and dissolve in the milk, and work into it, mixing the two milkings. We warm the milk to about eighty-four to eighty-six degrees, and then put in the rennet, enough to curdle the milk in forty minutes, then cut it

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with a curd cutter; then let it settle a little, then dip off whey to heat for scalding; heat the curd to 100 degrees by turning on hot whey at three separate times; let it stand thirty minutes, then separate whey from curds by a strainer laid into a sink, this whey running off in a conductor, and the curd remaining. Keep stirring the curds till they get dry enough to salt; then use two and one-half lbs. common salt to 100 lbs. cheese when pressed; mix thoroughly by hand, then put it into the hoop. Press twenty-four hours in a lever press turning once while in the press. Take from the press, color slightly with otter prepared in lye; dress with whey oil, young cheese daily, older cheese every two days, or oftener if the weather be damp. When the cheese comes from the press, after coloring, we bandage.

The annual income per cow from the dairy is thirty dollars. Cannot state the cost of making.

Cows of no particular breeds.

Raise my own swine, the Leicester breed. Have pigs come in April, or 1st May. Keep them on the sow usually eight or ten weeks, then let them and old hogs together have dairy slops till peas, in September. Hogs are kept in a pen and small yard; no grass; winter on coarse, unground, uncooked grain; no roots. In September begin to feed peas in the straw; then thrash and soak them in the whey, and feed in this manner till slaughter. Feed a little soft corn before slaughter. Feed no potatoes nor roots in the fall. Keep one hog to three cows. Make hogs weigh in the fall when slaughtered, spring pigs from 180 to 200 lbs., and old hogs 300 lbs.

DWIGHT SPENCER.

RICHARD BENNETT'S STATEMENT.

To the Viewing Committee of the St. Lawrence Ag. Society:

Gents.—According to your request I beg leave to report to your honorable body the following statement of facts:

No. of acres in my farm occupied by myself,..... 280
Woodland,..... 115

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Pasture,..... 100
Meadow,..... 35
Plow,..... 30

Divided into three fields. About three miles of fence, mostly black ash rails, secured by heavy rails or poles on the top, without stakes; cost fifty cents per rod. Open ditch eighty rods; cost nineteen cents per rod.

Weeds.—I have no burdocks on my farm, but few Canada thistles; the best time I find to cut them is in July, just before seeding; there is plenty of living water on my farm, and plenty of shade in the pasture; I allow my stock all to run together; I pasture in the above mentioned pasture, thirty-nine cows, two yoke of oxen, one pair horses, and five yearlings; notwithstanding the dry season, feed is in abundance; I get my wood by cutting timber, other than maple, in my sugar place.

I cut between seventy and eighty tons of hay, a little more than two tons per acre; my meadow land is on the creek flats; has been cleared from one to five years; timber was mostly alders, and never was plowed; flows every spring with water; do not use any plaster or manure on it; I pulled the alders out by the roots, and as fast as I cleared it I seeded it with red top and herds grass together, one peck per acre; dragged it with a sharp toothed drag, and very thorough where there was wild grass, without any other crop; mowed it the next season; got good crop; I cut all sprouts soon after haying; I allow my cattle to run on my meadows only in the fall, after the feed is large; it costs me about two dollars and fifty cents per acre to cut, make and put my hay in the barn; I do it without any machinery.

I have three barns, two hay barns and one corn barn; I stack a small portion of my hay; build them round and put the coarsest grass on the top; I have just began to break up my land; I plow about seven inches deep; I first crop with spring wheat or oats, the next crop barley or peas, then wheat again, then seed; I have six acres of wheat, five of barley, five of oats, six acres of mixture of barley, oats and peas, for hog feed; also six acres of corn and two acres of potatoes.

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In fixing my corn ground I draw my straw manure one year beforehand; put it on a bed of leached ashes; mix it with plaster and salt.

I use a plow among my corn, it brings up fresh dirt; I hill my corn about four inches; I raise from forty to fifty bushels of corn to the acre; I cut my corn by the roots before the frost; when cured, husk and stock the stalks; feed them to my cows in the fall.

I raise about twenty-five bushels wheat to the acre; about thirty-five bushels barley; about fifty of oats; peas, about thirty-five bushels, mixed with oats and barley; I thrash with flail; feed a portion of straw to my cattle in the stable; bed them with what is left in manger; throw it out with the dung; the remainder I feed in the yard, and draw it in the spring as mentioned before; I weed my grain twice or three times before any weeds go to seed.

I stable all of my cows; feed them some straw in cold weather, the fore part of the winter; after about the first of February I feed all the good hay they want, and some meal.

I milk thirty-five cows; in the morning about five o'clock, in the evening about six; think it a good plan to milk cows early, both morning and evening; gives them a better chance to feed in the cool of the day.

I set my milk until just as it begins to turn; then skim it, and churn the cream with a dog power; work my butter until the buttermilk is all out; then salt with rock salt, about six pounds per hundred; put in a large bowl; stand twenty-four hours; then slightly work it again, and pack it in firkins; pound it down solid. I made from the said thirty-five cows, for eight weeks ending the 30th July, eighteen hundred lbs. butter; five of the cows are only three years old, and three are farrow this season; I make each season about one hundred and fifty lbs. butter from each cow, and about 25 lbs. pork, and raise six calves; it costs to milk the cows and make the butter, about one dollar and twenty-five cents per day.

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I came on to my farm, bought sixty acres six years ago; had about three hundred dollars, which was all I was worth; in the sixty acres was about twenty acres cleared, and a shanty built, and one barn; I have bought since, so that I now have four hundred and seventy acres; one part is rented, with cows on it; the other I use myself; all of this land will keep seventy cows; all of the improvements, except about fifty acres, I have made myself, I can sell the land for twenty dollars per acre, making nine thousand four hundred dollars; I still owe towards the land, twenty-five hundred dollars, which my personal property will about pay.

The above statements are correct.

RICHARD BENNETT.

August 9, 1853.

PROCEEDINGS OF THE ST. LAWRENCE COUNTY AGRICULTURAL SOCIETY.

CANTON COURT HOUSE, *June* 13*th*, 1854.

At a meeting of members of the St. Lawrence Agricultural Society, there were present: Abel P. Morse, presiding, Ebenezer Miner and Henry G. Foote, directors, and the following members: R. C. Jackson, William H. Davis, Charles Shepard, S. Wolroth, William B. Goodrich, Ransom Tuttle, Paine Converse, George S. Winslow, L. E. B. Winslow, J. E. Clark, Col. H. Barber, Avery Collins, Versal Healy, Eathan Everest, John L. Russel, Esq., E. C. Page, B. Hodskin, L. B. Storrs, Hiram J. Cooke, and Clapp Baily. The meeting was called to order, and proceedings of last general meeting, the report of the president to the State, and of the treasurer, as recorded, were read and approved.

The Society then proceeded to an election, whereupon David C. Judson, of Ogdensburgh, was elected president, Abel P. Morse, of Hammond, first vice-president, Col. Henry Barber, of Canton, second vice-president, and John E. Perkins, of Massena, third vice-president.

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Mr. Russell, of Canton, introduced the following:

Resolved, That Mr. Foote, as secretary, and Mr. Miner, as treasurer, be re-elected, and that the secretary be authorised to employ an assistant, and to certify to the treasurer the sum required to pay such assistant for actual services, which certificate shall be a draft on the treasury and be paid by the treasurer.

Mr. Foote expressed his unwillingness to serve the Society longer, but, with this gratuitous and generous provision, would accept for another year, if it were the pleasure of the Society.

The resolution passed.

Mr. Russell offered the following,—which was passed unanimously:

Resolved, That this Society deeply regret that the ill health of Uriel H. Orvis, president, prevents his officiating on this occasion, and that the members present gratefully acknowledge his valuable services to the Society, and to the agriculture of the county.

No resolution pending, at the request of the presiding officer, several gentleman addressed the meeting upon various topics of interest, connected with the management of the Society, and its distributions of premiums, and subjects of encouragement; after which it was

Resolved, That the proceedings and reports of president and treasurer be published in the county papers.

ABEL P. MORSE, *Vice-President*.

HENRY G. FOOTE, *Secretary*.

SARATOGA.

The executive committee of the Saratoga County Agricultural Society, held a meeting at the court house in the village of Ballston Spa, on the 7th day of March, 1853; at which meeting the annual fair and cattle show was designated "to be held on the 13th, 14th, and 15th days of September next," at Mechanicsville; and a premium list and judges, together with rules and regulations to govern the exhibition, were adopted.

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The 13th annual meeting, fair and cattle show was held in accordance with the foregoing appointment.

The exhibition was well worthy of the County of Saratoga. Although the protracted storm kept away thousands from the gates and show ground, yet the exhibition of animals in the several classes was never surpassed in this section of the State. Sixty-four horses, of the different classes and ages, and twenty mares and colts were entered for competition. The committee on first class horses well remark, that they felt a domestic pride, never before enjoyed, in witnessing the rare exhibition of horses; that they had never seen as many and as good specimens at any former county fair.

The exhibition of cattle, sheep, swine, poultry and the mechanic arts was equally deserving of commendation. The products of the garden and of the field were admirable. The floral department was superior to anything heretofore exhibited. The display of fruits shewed that great pains had been taken to perfect the various kinds and varieties. Thirty varieties of pears and fifteen of plums were exhibited. Peaches, quinces and grapes of the finest qualities covered the fruit table. The ladies, too, came in for their full share of agricultural distinction. The different kinds of cotton, woolen and linen goods, exhibited by them, of their own manufacture, gave the best evidence of their qualifications to discharge the various duties appertaining to housewifery; and seventy-nine premiums were awarded to the owners of articles under the head of household manufactures.

The address of J. A. Corey, Esq., was listened to with fixed attention. Mr. Corey, having been the recording secretary of this Society during the entire thirteen years of its existence, was well prepared to make his remarks practical and full of interest. A vote of thanks was loudly given to the orator at the close of his address, and a copy thereof requested for publication. The address was printed and a copy thereof is herewith sent to the secretary of the State Society.

The cause of agriculture in the county of Saratoga is evidently improving, each succeeding annual exhibition shewing a good

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improvement upon its predecessor, and proving, beyond controversy, the great utility of annual county exhibitions of agricultural and mechanical productions.

Officers for 1854:—William Wilcox, of Saratoga, President, Stephen Burtis, of Mechanicsville, first Vice-president, John W. Eddy, of Saratoga Springs, second Vice-president, Lewis E. Smith, of Mechanicville, Corresponding secretary, John A. Corey, of Saratoga Springs, Recording secretary, Reuben S. Burtis, of Mechanicsville, Treasurer.

J. S. WEED,
Dep'y Rec'g Secretary.

SCHOHARIE.

Proceedings of the Schoharie County Agricultural Society, held at the Court House, in said county, on the 12th and 13th of October, 1853.

The exhibition of stock, agricultural products, and miscellaneous articles, although not as numerous as at former fairs, were of a superior order and quality, and gave evidence of an advancement in the improvements of the day, although not as rapidly as could be desired.

On Thursday afternoon, the Society met at the Court House; John P. Griggs, President, in the chair.

Addresses were delivered by J. F. Severance, and the President.

On motion, the thanks of the society were tendered to the speakers, for their able and eloquent addresses, and a copy requested from Mr. J. F. Severance, for publication.

A committee of five were appointed to select officers for the ensuing year, who reported the following persons:

Officers for 1854.—For President, Thomas Lawyer; Vice-presidents, John Westover, Hiram Sexton, Jonas Kilmer, John Young

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and Peter T. Danforth; Secretary, Alonzo Ferguson; Treasurer, John C. Shutts; Executive Committee, Abram A. Osterhout, Jeremiah Runkle, Henry L. Russel, Isaac Hutton and John G. Stall.

The next annual fair was directed to be held in the village of Cobleskill.

The several committees then reported, and the premiums were awarded.

JOHN P. GRIGGS.
President.

SENECA.

The farmers of Seneca, having witnessed the benefits of having their show grounds enclosed last year, and of charging a small admission fee, determined to follow out the same system this year, and considering the smallness of the county, the triumph has been complete. The most sanguine have more than realized their expectations, and those who opposed the experiment are silenced by its complete success. Indeed our annual exhibitions are being looked forward to by the inhabitants of the county as festivals and holidays, where families from all parts of the county and of the adjoining counties, may assemble for the interchange of opinions, and for the forming of new friendships.

We regret our inability to do justice to the late county fair. The weather proved auspicious, and the attendance was very large, as will appear by the increase in the treasury. It is justly a source of pride and satisfaction to the farmers of this small county, that its fairs are not exceeded by those of any other county in the State. In fact we are assured by those who attended the State fair that the exhibition in this county was entirely ahead of it. We hardly think this possible, but it certainly was not far behind the parent institution.

The entries of horses was 137; of cattle of all kinds 101; of sheep 44—numbering 128 animals; of swine 29; of poultry 72;

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of household products 63; of fruits, flowers and vegetables, 166; and for discretionary premiums 233. The entire number of entries exceeded those of last year about one third and nearly reached a thousand.

The show of horses was large beyond any former occasion, and embraced many superior animals. There was an increase in the number of cattle, but we cannot say that the exhibition in this particular excelled that of last year. In swine there was a marked improvement and a large increase in the number exhibited.—The poultry exhibition was remarkably fine. Almost every variety of the hen family that could be thought of was on the ground, from those which were as large as turkeys to the beautiful and diminutive bantams. They were exhibited in coops almost as various as the fowls themselves. The entries under the head of machinery and mechanics were larger than formerly, still they might have been largely increased to the advantage of those who manufacture articles of utility.

There was a poor show of implements and tools. The committee very justly say in their report, that they very much "regret that amidst this unparalleled display of agricultural products, there should be such a poor show of mechanical productions—but one single plow—no harrow—no fallow cultivator—no horse rake—no grain cradle—no clover cradle—no grass scythe hung for use—no corn hoe—no set of dairy utensils." The committee add "that they do hope for the honor of the mechanics of Seneca county, that at future exhibitions, there may be a better display in this branch of the mechanical department."

The number of entries under household products was less than last year, but the articles entered more various and the display better. But seven entries were made of shirts against thirty-five last year, although the premiums offered about the same in value. It would seem from this, that the ladies do not bear disappointment with as much resignation as the rougher portion of creation, or have less confidence in the impartiality of those who decide upon the merits of their productions.

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The entries under fruits, flowers and vegetables were nearly trebled. Notwithstanding the lateness of the season, which prevented the exhibition of many of the superior varieties of fruit grown in this region, the exhibition was respectable. The vegetable world was well represented in quantity, quality and size. A squash weighing 104 lbs., and nine grown from one seed weighing 450 lbs., were exhibited.

As usual the entries for discretionary premiums were large and we acknowledge our inability to do justice to many articles of merit deserving special notice. The committees called the special attention of the society, to the woolen shawls exhibited by C. W. Cook, Esq., the agent of the Waterloo woolen manufacturing company, "as a highly meritorious fabric, deserving more than a passing notice." We cannot omit refering also to several specimens of painting, likewise of leather and of manufactured clothing.

The plowing match took place on the third day of the fair and twelve entries were made.

The harvest home, held in the society's large tent, on the evening of the second day of the fair, was a new feature, introduced for the first time in this county. The weather permitting, it was expected there would be a large attendance, but we were hardly prepared for what really occurred. The floor was arranged to accommodate 400 dancers, and upwards of that number actually danced at the same time; while at least four times that number were seated around listening to the sweet music of Cobleigh's band, and watching the movements of those on the floor. The fact that over five hundred tickets were sold, is sufficiently expressive of the interest felt in the festivities of the evening. Another very gratifying fact is, that not the slightest disturbance occurred notwithstanding the immense assemblage,—a fact that speaks volumes with regard to the orderly character of our population. Every one seemed pleased and gratified, and all were disposed to be pleased themselves and have others pleased.

The fair during the three days was visited by at least 12,000 persons, a very moderate calculation when about five thousand

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tickets were sold, and the members, about seven hundred in number, having the privilege of taking in their families. The receipts of the fair including what was received on account of the dance, amounted to $1,681. This added to the Waterloo subscription, $660, what was received from the State and for lumber sold after the fair, would make the entire receipts of the society during the year $2,350.24 besides $444.89 in the hands of the treasurer at the close of the last year. We doubt if there is another society in the State in a like prosperous condition.

Mr. Johnson, the corresponding secretary of the State agricultural society, who was to deliver the address, did not arrive, to the great regret of a large audience which had assembled to hear him. After a few appropriate remarks by the President and the passage of the usual resolutions, the premiums were declared off by the Secretary, and the multitude, mostly composed of the members of the society, their wives and children, dispersed to their respective homes, highly delighted and pleased with the results of the fair.

On Friday the 16th of December, instant, a meeting of the executive committee of this society, convened at the Waterloo hotel, in Waterloo—Hon. Garry V. Sackett in the chair—when the following proceedings were had:

Death of John Delafield, Esq., president of this society and ex-president of the New-York State Agricultural Society.

Mr. Bacon in a few appropriate remarks, announced the death of Mr. Delafield, the president of this society, which occurred on the 22nd of October, at his residence, Oaklands, in this county; and since the last meeting of this board.

Whereupon judge Sackett presented the following preamble and resolutions, which were adopted and ordered to be entered at length on the minutes of the society.

Mr. Delafield for many years occupied a prominent position in our commercial metropolis; as president of the Phœnix Bank he was well known throughout the State. In 1842, he retired from the changing and busy scenes of his early manhood, and purchased

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a farm in the town of Fayette, in this county, to which he removed and where he continued to reside until his death.

His was a spirit too enlightened, active and untiring, to be satisfied with the results of the past, however honorable to himself. He did not leave a city life to repose in the shades of idleness. Agriculture was to him a new pursuit, and he gave to it the full powers of a cultivated, discerning, energetic mind. No investigation, in the line of his new calling, was too laborious; no useful experiment too detailed, not to command his most careful attention. He learned farming as a science, and became deeply versed in all its branches. His career, since he lived among us, has been marked, and of the highest order of usefulness. He was enthusiastic in his occupation, and infused the spirit of progress, emulation and improvement, into those around him. The daily labors of the farm were ended, only to begin his evening record of each day's incidents, results and accomplishments. This journal of the farm was regularly kept by him for many years, and remains a valuable legacy upon a subject of the deepest interest to us, and to the country.

In 1847, Mr. Delafield was appointed president of this society, which place he held until his death. We knew him personally; were familiar with his eminent usefulness as a citizen, a farmer, and a man; and we have experienced the great value of his services as a member, and the presiding officer of this society. From small beginnings, his untiring energy, perseverance and devotion, have contributed, in an eminent degree, to make this society one of the first agricultural associations of the country. His writings have greatly benefited us at home, and enlightened the country abroad. The spirit he so essentially aided to awaken among us, may be seen in the higher condition and advanced prices of our lands; and truth and justice require our acknowledgment of our high obligation to our lamented president, for these results.

The distinguished character of Mr. Delafield, in the field of agriculture, and his moral worth had spread far beyond the limits of our society. Higher honors awaited him than we could bestow. He became known throughout the State, as one of the

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most enlightened and accomplished farmers of the country. In 1851, he was unanimously chosen president of the State Agricultural Society, the duties of which office he performed with honor to himself, and eminent advantage to the State.

He knew that the cultivation of the earth was a noble calling; and he was not satisfied with its slow and unequal progress. He felt, and justly felt, that too little had been done to enlighten and educate the public mind in relation to it. He saw that science, in its various forms, and the learned professions, had received in no stinted amount, the public aid; that colleges, and the higher institutions of learning, had appealed, with success, to the power of the State, for support, from our earliest history—while the science of the soil, that science on which the whole fabric of human society depends, had been left alone to work out, unaided, its own regeneration, from the darkness and errors of the past. He felt this injustice, and resolved, that what exertion could accomplish, should be done to rectify the wrong. The sympathies, the sympathies only of the State, had been given to our agricultural college; but in the face of this continued neglect, he resolved to carry through this important enterprise by personal effort, and to secure, if possible, the location of so important an institution in our own county. The incipient steps had all been taken; he had well nigh surmounted the many obstacles in the way of the attainment of his exalted purpose, when the hand of death arrested forever his elevated course. This last effort of his life to secure the means of improving the noblest calling of mankind, was worthy of his fame. He sleeps with the dead; but his good deeds live after him.

Resolved, That in the death of the lamented John Delafield, the late president of our society, we have sustained an irreparable loss, agriculture an enlightened supporter, and our county one of its most virtuous and distinguished citizens.

Resolved, That these proceedings be published, and that a copy be furnished to the widow and family of the deceased, by the president.

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Resolved, (on motion of Judge Coe,) That the Hon. Garry V Sackett be, and he is hereby appointed president of this society, to fill the vacancy occasioned by the death of the Hon. John Delafield.

The committee then proceeded and made out, and ordered to be published the usual premium list, &c., for the winter fair to be held at Waterloo, on Thursday, the second day of February, 1854, and adjourned.

Whole number of members of the society for present year, six hundred and eighty-nine.

Whole amount of funds in the treasury for present year:

Cash from members, paying one dollar each,.....	$402 00
Cash from members, paying over one dollar each, ...	660 00
Cash received for 4,952 admissions at gate, 1s each,....	619 00
Cash received for 513 admissions to Harvest Home, one dollar each, ...	513 00
Cash received for lumber, &c., sold after the fair.....	82 24
Cash received from the State, ...	74 00
Balance in treasurer's hands, Dec., 23d, 1852, ...	444 89
	$2,795 13

Disbursements for the year ending Dec., 23d, 1853:

Cash paid in premiums $607.75 cash paid for printing, $195, ...	$802 75
Cash paid for contingencies $167.49 cash paid for tent and transportation, $130.50, ...	297 99
Cash paid for expenses of fall exhibition, ...	1,032 69
Cash in treasurer's hands, Dec., 23d, 1853, ...	661 70
	$2,795 13

WINTER FAIR.

The annual meeting and winter exhibition of the Seneca County Agricultural Society, was held at the Court House in Waterloo, on Thursday, the 2d of February, 1854, Hon. Garry V. Sacket, president of the society in the chair.

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Officers for 1854.—For President, Garry V. Sacket; Vice-presidents, John L. Eastman, Lodi; Truman Boardman, Covert; John E. Seely, Ovid; Thomas J. Folwell, Romulus; O. W. Wilkinson, Varick; W. B. Coryell, Fayette; Ira Johnson, Waterloo; F. J. Swaby, Seneca Falls; Jason Smith, Tyre; Israel Lisk, Junius; Treasurer, John D. Coe; Secretary, J. W. Bacon.

J. W. BACON, *Secretary.*

Waterloo, Dec., 28*th*, 1853.

STEUBEN.

The Steuben County Agricultural Union was organized in June last, and held its first fair October 12th and 13th, under very favorable auspices. The attendance was unusually large, and the exhibition exceeded the most sanguine expectations. It was gratifying to witness the farmers and mechanics of the county, standing foremost as exhibitors and competitors at the fair, giving assurance that they recognized it as peculiarly *their own*, in its inception and consequence.

The show of sheep would compare with any in the State. The finer grades have been selected and reared for years in this vicinity, as also the Leicester, Bakewells, and South-Downs, and probably no county in the State has better flocks, in grade or value, and no one reaches the aggregate summed up for Steuben.

In horses, swine, and cattle, there was a fair exhibition; of the latter particularly, indicating attention in selecting the finer and improved grades of the Devonshires and Durhams. These were the center of attraction, and called forth universal admiration. The day is not far distant, when, through the influence of county and State fairs, the stock kept by our farmers will all be of the improved and finer grades, and no one will be content to possess any other.

In the products of the dairy, there were some creditable samples, which indicated what our agriculturists *could* do provided their attention was called to this department of industry. Steu-

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ben ought to be a *dairy county*, and the butter and cheese ought to be of a quality to command the highest New-York prices. The time will soon come, when, consulting the physical capacity and adaptation of our hills and vallies, we shall make the dairy a prominent feature in our agricultural pursuits.

Of the cereal products and fruits, there was quite a large display. Soule's wheat weighing sixty-four pounds to the bushel, indicates a soil and tillage that stands high, and invites competition. Of barley there were two of the finest samples that I ever saw—clean, plump, and bright. Apples of the most inviting appearance, one variety, the Fabius Sweet, weighing twenty-two ounces, sound and crisp throughout, and of the most palatable flavor. The display of garden products was large, and of the finer sorts, showing the capacity of the Conhocton valley for that culture, and of its citizens to rear them. Uri Balcom exhibited the greatest variety, and one specimen of corn, yielding 134 bushels to the acre.

Of mechanics and manufactures there were a great variety. Farming implements of all kinds, from the improved hay fork to the grain drill. Domestic manufactures were in place, showing that the wheel and the loom are not entirely driven out from our domicils, but that the "good old times" of indoor manufacture linger in the rural districts of our county.

Aside from domestic manufactures, our ladies also exhibited many beautiful fancy articles of different kinds from the flower vase to the embroidered ottoman and coverlet. Of these there was much to admire in design and execution, showing skill and taste in their production.

Upon the whole, there was universal gratification expressed by all in attendance, and a universal determination to make the next fair still more attractive and interesting.

I append to this a brief description of the physical and geological features of Steuben county, which may be of some importance and use for general reference.

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In physical appearance, no county in the State presents a greater variety in the midst of so much uniformity. There runs through its whole territory a unity of feature and of geological development, amid an endless variety of landscape and of scenery.

In some counties of the State, the more elevated parts are characterized by rocks and precipices, forbidding the approach of agriculture; but in Steuben county, the highest elevations reward the husbandman equally with the intervales. These elevations present a general smooth surface, uniform in outline, and tillable to their highest acclivities. The purest springs gush from the hill-sides, giving vigor and growth to vegetation, and attractions of no ordinary description to the vallies.

The vallies of the Conhocton and Canisteo, with their lateral and tributary intervales, constitute a prominent feature in the physiology of Steuben county. These lie in the center and southern parts of the county; they converge and join at Erwin, and thence stretch through Pennsylvania to the Chespeake.

The valley of the Conhocton is seen in the slight depressions of the hills in the towns of Conhocton and Dansville, from whence the river takes its rise. At Liberty it becomes more definable, and from thence to Bath and Corning it is surrounded by hills which approach and retire from the river bank in irregular order, affording a greater or less extent of intervale. In this valley but few rocks appear in place, and the hill sides are covered with soil. In the upper portions of the valley, the soil is of gravel and clay. In the lower, it is more alluvial. In some localities the finer deposits are found above the coarse, in others it is found upon one side, and the coarse upon the other, evidently caused by the current of the river.

The valley of the Canisteo constitutes the principal feature of the south-western part of the county. It extends from Dansville south and east through Hornellsville, Canisteo, Cameron, Addison and Erwin, to its junction with the Conhocton, and is connected in its course, with that of Bennett's creek, the source of which is 800 feet above the Canisteo, and is surrounded by hills several hundred feet higher. Also that of the Tuscarora creek,

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which, though scarcely definable in Troupsburgh and Woodhull, becomes more extended in Addison.

In the valley of the Canisteo the soil is principally aluvium, which in some places constitutes the lower slopes of the hills, and is classed with the richest lands in the county.

Between the Canisteo and the Conhocton are high hills, some of them the highest in the county, with a clay and gravelly soil. That known as the Howard flats are formed of alluvial hills, and ridges but little elevated above the general level.

In this elevated section of the county, in a high valley which stretches north and south, forming an extended swamp, and surrounded by hills, lies Loon Lake, to the south of which Neil's creek takes its rise, which runs south to the north of Howard, and thence eastward to the Conhocton. Along Niel's creek and in Howard, the alluvial extends to a great depth, and is devoid of gravel or other strata.

Between the Canisteo and the Conhocton may be seen the highest hills and the lowest valleys; extended flats, here broad, level, and uniform, there broken, narrow; presenting lakes, swamps, and creeks, as furrows and indentations in the general outline. All these combine to make up a scenery as strong and as impressive as it is varied and interesting.

That portion of the county which lies south of the Canisteo, constitutes a moiety of the elevated lands between that river and the Tioga. The tributaries of the Tioga drain Canton on the east, and Addison on the west; while on either side rise those high, broken, extended and precipitous hills, so peculiar to this section of the State. These hills are very irregular in form and arrangement; they appear as if produced by the eddy of some great current. They contain pebbles, boulders, and masses from strata immediately beneath, worn smooth, which bear evidence of having been in motion, and removed from their parent rocks.

Some of these hills are capped with conglomerate, shewing masses of red sand stone, together with fossils that border the coal

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regions. The strata of rocks near the Painted Post is found to dip towards the south 130 feet to the mile, and at the Chimney Narrows 100 feet, and five miles further 198 feet, which would put the strata of rocks in Steuben county 6,000 feet below the coal beds of Pennsylvania.

In the northeast part of the county lies the Crooked lake, which presents a feature peculiar to the physiology of this section of the State. Surrounded by the highest hills, it presents a deep excavation in the rocky stata, which drained, would expose a chasm of fearful and precipitous appearance.

The Seneca lake, upon the extreme eastern borders of the county, presents a much lower depression. Its waters attain a depth of more than 500 feet, while their surface is some 300 feet below that of the Crooked lake.

The Chemung Valley, stretching from Jefferson to Elmira, is but a continuation of that of the Seneca lake. And the valley of the Crooked lake extends from the Conhocton north, to Penn Yan, and thence northeast towards Bellona; and from its west branch through Jerusalem, it is perceptible in the town of Potter, in Yates county.

South of the Crooked lake, along the Cold Spring brook, are deposits of marl and tufa; and at the northwest extremity, at Branchport, is a well, impregnated with sulphur.

Intervening the Seneca and Crooked lakes, a distance of some eighteen miles, lie two elevated ridges extending north and south, divided by the valleys of Mead and Mud creeks. Along the latter are Little and Mud lakes, aside from several of lesser note towards Savona. The valley of Mead creek debouches into the Conhocton at Cooper's plains; that of Mud creek at Savona.

West of Crooked lake are the elevated hills of Pulteney, Prattsburgh and Conhocton, through which pass the Five Mile and Ten Mile creeks, forming, in the north part of the county, but slight excavations, but deepening in their course southward, until they find the lower level at their junction with the Conhocton. From

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these hills the water flows south to the Conhocton, and north to Lake Ontario. Here some of the tributaries of the Susquehannah rise within a few rods of the Flint creek, each finding an outlet on the sea board, some thousand miles apart.

In the upper valley of the Conhocton, and of its tributary streams, the soil, and strata of rock beneath, are similar to that of the north part of the county generally. The slate, shale and grits of the fucoidal group predominate. In Campbell and Irwin the strata is that of the Chemung group, but throughout all the river flats, the debris of all the rocks above, together with alluvium from the hills, form the deposit.

In a ravine at Hammondsport, some 300 feet of slate, shale and grit are exposed, in succession of layers, presenting all the features of the group, as distinctly as developed upon the Genesee.

The hills and valleys of Steuben county, abounding in springs, lakes and rivers, furnish an immense hydraulic power, far, in many instances, beyond present use. Through these valleys, which formerly were secluded, are now afforded every facility for inter-communication. The products of the county were formerly taken in arks down the Conhocton and Susquehannah, to Baltimore, or in wagons across the country, to the Hudson. Now, on the shores of the Crooked and Seneca lakes, they find a ready market *by canal*, and throughout the valleys of the Conhocton and Canisteo, *by railroad*. The city of New-York was formerly one week distant from any part of the county; it is now but twelve hours. And in all our towns there is evidence of an easy and frequent communication with our commercial metropolis.

The farming interest of the county is taking a more profitable direction. The lumbering business is falling off, and more attention is given to agriculture. Lands are improved and better tilled, and the farmers are becoming wealthy and independent.

The general features of the county are pleasant, and happily diversified. The soil is good for all agricultural purposes. Along the river flats, of the southern towns of the county, and in some parts of the northern, corn is produced abundantly. It is not of

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as easy culture on the hills. There the best wheat is produced; the berry is large and plump, free from smut or rust, which often detracts from its value in the low lands. The wheat crop of the present year was unusually productive. Some field's average was as high as 41 bushels, and many others from 30 to 40. The fly, though seen in some places, did not materially reduce its yield in the aggregate, or affect its quality.

In the hill country, the soil produces the richest pasturage, and is therefore peculiarly appropriate to the rearage of sheep and cattle. Some of the farmers have for years produced the finer grades of wool; but few, however, have devoted any attention to butter or cheese. The time is not distant when Steuben will produce these, in quality and quantity, equal with Chemung, or any other county of like soil and feature.

Each man must determine for himself, as to the character of his soil, and to what particular pursuit it is best adapted. His determination is wise if it results from experience, or the evidence of surrounding circumstances. It is always the part of wisdom to cultivate such products as are congenial to the land, and if that is better adapted to grazing than to grain, this latter should be left to those who can drive their plowshares through appropriate soils.

The first settler came to Steuben county from Pennsylvania, in 1790; and from that time onward, as in other portions of western New-York, the increase in population has been rapid. In 1825 the population had reached 25,000; in 1830, 34,000; in 1835, 41,000; in 1845, 51,000; shewing an annual average increase of about 1,000.

G. DENNISTON,
Pres't of Steuben County Ag. Union.

Prattsburgh, Dec. 22, 1853.

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ADDRESS DELIVERED BY HON. A. B. DICKINSON, BEFORE THE TIOGA CO., PA., AGRICULTURAL SOCIETY, MAY 1ST, 1854.

We give this valuable address of the Hon. A. B. Dickinson, of Steuben Co., in connexion with the excellent report from that county. This address embodies the experience of Mr. Dickinson, who has been among the most successful farmers in Steuben Co., the result of whose experience is worthy the attention of all of our farmers.

Mr. President, Ladies and Gentlemen :—I am here by your kind invitation to address you on the important subject of Agriculture, and the practical tilling of the soil. Honorable as our vocation is, and as much as has been said and done, there is room for more, without falling back on stale and thread-bare topics of ancient or modern times.

The inventive powers of man are only equaled by his ingenuity in constructing and bringing into requisition useful implements to cultivate the earth, and bring forth her hidden treasures to contribute to the benefit, the wants and luxuries of mankind; and to this end every farmer should study well, and know to what his soil is best adapted, and for what the God of Nature intended it, without endeavoring to change the organic law of nature itself, by laboring to raise crops, which neither the soil nor climate of the country is calculated to produce. As the difference in the price of any of the staple products is small, except in the vicinity of cities for marketing, it will not, as a general rule, pay any considerable portion of the expense consequent upon quarreling with the unerring and fixed law of nature.

There are, Mr. President, many kinds of farming,—fancy and practical, profitable and unprofitable, importing and exporting, of every shade and grade, all aiming at the same great end; industry, accumulation and intelligence. And to this end New-York sends to Virginia for her profoundest statesman to deliver the annual State fair address: and Indiana sends to New-York for her living Encyclopedia, to speak to the farmers of Indiana. Although these addresses did great credit to both the distinguished gentlemen, for the learning which they evinced and the general

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and useful information which they imparted, yet the former never attempted to tell to what the soil in the vicinity of Saratoga is best adapted, and the latter failed to portray, with his usual eloquence, the peculiarities of the soil of Lafayette and its adaptation to congenial products, for the reason that neither knew the peculiar, natural, germinating qualities of the soil on which they stood. And here, permit me to say, I much fear I shall find myself at fault, or at least my hearers will find me so; but, Mr. President, with your permission, I will make the attempt, although I am well aware that many, very many of the farmers of Pennsylvania, whom I see around me, could much better perform this task than myself.

The soil of Wellsboro' and vicinity is better adapted to grazing than to anything else; and here let me remark that all grass countries grow rich, while all, exclusively grain growing countries become poor and finally run out, unless so adapted to grasses that the soil can be renewed by their cultivation. For instance, in portions of Monmouth Co., N. J., where wheat formerly grew on the original soil as well as in the best wheat growing counties of Western New-York, former wheat fields are thrown out to the common, and now produce nothing but *fivefinger* and poverty grass. And yet in this impoverished state, land can be reclaimed with lime; and made to produce good crops of wheat again, but soon runs out; in short, it costs more to renovate the land than it is worth, while so much cheap land lies idle at the West.

Although this vicinity is emphatically a grass country, it is not so certain for wheat. The system of grazing can be pursued to most advantage to the husbandman, and that after all is just the information the farmer most needs, to know well the soil he cultivates. Your pastures, in my humble judgment, are best adapted to making butter and the growing of wool, more particularly butter. As the quantity of land in the United States is much less that will make good butter than that which will grow sheep and wool, there is less competition in the production of the former than in the latter, and the farmer should always choose that branch of business, in which there is likely to be the least competition; other things being equal.

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The first quality of butter-land is confined to portions of the New England states, New Jersey, Pennsylvania and New-York, while cheese can be made and sheep grown wherever grass grows, as I will endeavor to show hereafter. First quality of butter has been worth on an average, for the last twenty years, twenty-five cents per pound. Last year it brought in the New-York market, thirty-one; this season twenty five cents; and when I speak of these prices, I mean the very best quality that can be made which is very small, but might be very much increased. You have here all the elements for making just that kind of butter. To begin with, you must have in your pastures timothy, white clover, blue grass, red top or foul meadow grass, which I think is one and the same thing, only differing as it grows on different soils, pure soft water and a rolling or a hilly country.* All these things you

* The following remarks of Sanford Howard on the subject of grasses we annex:

Grasses for Pastures.—We have seen several extracts from an address of Hon. A. B. Dickinson before the Tioga Co. (Pa.) Agricultural Society. The subject of butter making appears to constitute a large portion of the address, and in this connection he speaks of the proper grasses for cow pastures. He advises a mixture of different kinds, as "when any kind is green and fresh, cattle do much better than when it is ripe and dried up." This is very well and the practice has long been followed in England, though too much neglected in America. But Mr. D. makes some confusion in regard to species. He says: "You must have in your pastures timothy, white clover, blue grass, red top, or foul meadow grass, which I think is one and the same thing, only differing as it grows on different soils." It is a mistake to regard fowl (not "foul") meadow as "the same thing" as red top: they are quite distinct species. Red top is the *Agrostis Vulgaris* of botanists. The fowl meadow is an American species, probably unknown to European authors—indeed we do not find it described in *any* scientific classification—but every person who compares the two can readily distinguish them, though both doubtless belong to the same genus. The fowl meadow has a longer and more, slender stem, a narrower and lighter green leaf, a more open head, and somewhat larger seed. Its chief value is for low meadows, not the wettest, but those of a deep vegetable or mucky soil. The stem keeps green and sweet even after the seed has ripened and fallen. It makes good hay. It will not thrive on what is called upland, nor in most situations where red top flourishes. In this vicinity it grows plentifully on the banks of Charles and Neponset rivers, above tide water. The name "fowl meadow grass," is said to have been given it on account of its seeds being formerly much eaten by wild ducks and other fowl, which frequented the localities where it grew.

Again Mr. Dickinson says: "The kinds I have named come forward in order. Timothy is first and blue grass last to mature." We are aware of the difficulty of being always understood when speaking of grasses by their common names. But we suppose the grass alluded to by Mr. D. as "timothy" is the herdsgrass of this section, or meadow cats tail of the English, (*Phleum pratense*). And we suppose by "blue grass" he means what is known as Kentucky blue grass, spear grass, green grass, June grass, (*Poa pratensis*). The former species is one of our latest grasses and the latter is one of the earliest, the one flowering in July and the other in June. The blue grass starts with the first warmth of spring, shoots directly into stem and forms seed. In drouth its growth is checked more than that of red top, though not so much as timothy or herds grass; but it starts with the first rain and grows later in the fall than almost any species.

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have, or may have, as these different grasses will all grow well if sowed and properly cared for; and I have never seen the first pound of good butter made where the cow did not feed on some or all of these grasses; and it cannot be made from these until they have been sown long enough to have the soil swarded over, to protect it from the sun, frost, rain and drouth. There will be then, and not till then, a solidity and sweetness to the grass that will give to the butter that rich, sweet flavor which makes it so desirable Butter partakes not only of everything the cow eats and drinks, but of everything offensive within its reach after it is made; as for instance, if a cow be fed on rutabagas, her butter and milk will partake of that flavor; if she feeds in a pasture where leeks, garlics and wild onions grow, there will be a still more offensive flavor; if she feeds in pastures where she can get a bite of briar leaves, beech or apple tree leaves, or anything of the kind, it injuriously affects the flavor of the butter, though not to the same extent, and would scarcely be perceptible for immediate use. So with red clover. Butter made from cows fed on red clover is good when first made, but when laid down in packages six months or a year, it seems to have lost all its flavor, and generally becomes more or less rancid, as the clover was of rank and rapid growth on which the cow fed The water the cow drinks must not only be soft, but clear, living, wholesome water, fit for the use of man. If she drinks from stagnant, filthy water, it will knock off three or four cents the pound from butter, all other things being right.

In the western country, on plain or prairie, the most of the water, in dry seasons of the year, is in stagnant streams or pools, covered with a green blanket, and just in the same proportion as it is offensive to the smell or taste of man, it will exhibit itself in butter when laid down and kept for any length of time; and yet none nor all these things on which the cow feeds injuriously affects the making of cheese, for the reason that the rennet necessary to form the curd, gives so sharp and different a taste, that all others are neutralized. The work of making butter is not completed when you have everything necessary for the cow to feed on; you must provide a good spring-house where every breeze is as sweet as that wafted from the rose itself, and everything not

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only cleanly but the butter must be worked at the right time, and every particle of butter milk must be worked out; and when that is done the working must cease; a little too much working spoils the grain and it becomes oily, and is only a second or third rate article. Salt must only be used in sufficient quantities to make it palatable, as salt is not necessary to preserve butter any more than it is to keep lard. Be sure to use Liverpool or Turk's Island, as no other salt has stood the test, although Onondaga saves pork just as well, and beef and butter reasonably well for immediate use; but for keeping until the next spring it is not so good, as its flavor is lost. Great care should be taken in selecting salt, as the manufacturers, at Syracuse, have become very expert in grinding and putting up their salt in imitation of the Turk's Island and Liverpool, and yet the butter when salted with Onondaga salt, after lying six months in packages, never fails to disclose the fact by a loss of two or three cents on the pound to the manufacturer.*

The reason rolling land is better for pasturing than level, is simply this: In the rainy weather, in May and June, on the flat land, the water does not drain off so soon, and the wet with the warm weather, sours, and in some instances mildews the grass, and it becomes flashy and loses its flavor, and the butter is insipid, and the price falls correspondingly. The difference between first quality of butter and a common article, is eight or ten cents per pound; on a very common article, one-half. I desire it to be borne in mind, the better the butter the greater the yield. It is just like brewing or distilling, the sweeter and cleaner every thing is kept, the better the yield; and now let us count up the profit of keeping cows. A first rate cow, well cared for, will make two hundred pounds of butter in a season, that is one pound a day for two hundred days, and at two shillings per pound, is fifty dollars. Her milk will make one hundred pounds of pork, worth six dollars more. We will call three acres sufficient to keep one cow a year, which is a large estimate for good grass land. This is a better business than can be done on the best wheat land in the country, with this advantage, that every year the farmer uses his farm

* Salt. We refer to the report of Prof. Cook in this vol. ante. 137, as to the salt of this State.

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for grazing, it is improving; if like these grass lands in sight, they will improve at least five per cent a year in productiveness, if properly used. I do not want to hear a farmer say, that on such land his meadows or pastures are running out. I can only say to that farmer, he does not understand his business; and if he will sow one bushel of plaster on each acre of land, every year, and not pasture his meadows after mowing, neither in the fall nor in the spring, nor turn into his pastures until there is something for his cattle to eat, he will in a very few years, have meadows that will average two and a half tons of hay to the acre: and one and a half acres will pasture a cow through the season, and two and a half acres keep a cow the year. In twenty years, by this system of farming, dairy lands now, would become fatting lands; and what I mean by fatting lands, is where the pasture is so nutritious that steers will fat in pasture, from the tenth of May until frost affects the pasture in the fall, as fast as the most skilful feeder could fatten them, on the best of hay, and as much grain of all kinds as he chose to feed them. That I call fatting land. Of this quality of land there is far less than of dairy lands, and it is more scattered; yet they are the best dairy lands in the world, where the water and climate is good, and no offensive vegetable grows with the grasses.

The leek, or wild onion, which spoils butter, does not hurt the beef; that is to say, cannot be detected in the live animal. There is considerable fatting land in Virginia, and in Kentucky, from Louisville to the base of the Blue Ridge; very little at present in Ohio; more in Indiana; a very small proportion in New England and New Jersey. In New-York, it is principally confined to Orange, Putnam, Dutchess, Madisen, Jefferson, Tioga, Chemung, Steuben, and Livingston. The lime-stone water is no detriment in fattening, and may be a benefit, as your State has some of the best fatting lands in the Union. Chester county stands pre-eminently high, and Philadelphia meadows are number one. They rent for the interest of three hundred dollars per acre, annually, on long leases, the occupant paying all taxes, without a building on the premises: the highest rental paid on the continent for broad acres for agricultural purposes. There, meadows and pastures were never plowed, and they have improved in the last

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thirty years, as I have no doubt they will continue to do for all time to come, so as to be perceptible in the life time of man, if used as they should be; and the time will soon come when the plow will in a measure, cease to be used on the most of the up lands of this county, except for raising oats, root-crops, and corn where the land has been highly manured. Your cattle will cease to be grazing late in the fall and early in the spring, and running at large. In the winter they will be kept in the stable at night, and in the yard during the day, instead of laboring hard all day to pick up a trifle to sustain nature, destroying ten times as much by tramping up the meadows, as all they get does them good. There is nothing more destructive to your soil, than cattle running over it when the frost is coming out of the ground; and yet there are some soils, which this kind of treatment, so injurious to yours, would really improve. And just so with regard to the kind of grasses you grow, those that are the very best, and I might say indispensable for your use, would be almost as pernicious to the wheat-grower, as the Canada thistle—that is blue grass, which is, of all others, the best for butter making and fattening, not only for its nutritious qualities, but for keeping fresh throughout the season, and is less affected by the frost than any other.

The red clover is the only kind of grass the wheat-grower should cultivate, and that is the very kind the grazier does not want, except to sow mixed with his blue grass, timothy and red top. All these are slow to start and mature, while the clover starts quick and protects not only the soil, but the other grasses until they mature and spread, and run out the clover. But one word on the importance of having all the different kinds of good grasses mixed, which grow well on your soil. We all know when any kind is green and fresh, cattle do much better than when ripe and dried. The kinds I have named come forward in order. Timothy is first and blue grass last to mature, and by having these mixtures, you have fresh pasture through the season. One word on the subject of preparing your field for sowing the grass seed. Though ordinarily you have not much trouble in this respect, in this immediate vicinity, there are occasionally some fields, or parts of fields, which do not catch. The remedy for all this is, on your

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dry land, where your seed would not be so likely to grow, have your soil well prepared early in the spring, and sow it with spring rye. On the first dragging, let a man follow the drag with four quarts to the acre of each kind of seed, timothy, red clover, and red top. Then cross sow it with two quarts each of white clover and blue grass, rolled in plaster; then drag it all in well; then put on a good heavy roller; and a failure will never happen if the seed is good. Sow one bushel of plaster to the acre when the rye is a few inches high; this course is only necessary in extreme cases. The reason that rye is better to seed after than any other crops that I have tried, is, it grows tall and without leaves at the bottom, while oats and other spring crops, grow thick at the bottom, and smother the *young grass*.

Your soil is as well adapted to the growing of sheep and wool as it is to dairying. The growing of wool is as different a business from that of growing sheep, as dairying is from that of raising cattle. The farmer who lives near a market-town, with pasture adapted to grow sheep should keep a large sized animal; first for the purpose of selling lambs, which if good at ten and twelve weeks old, bring in the New-York market, from three to six dollars, (I have sold one at nine dollars); the carcases of the dams are usually disposed of the same season, as the lambs are taken off early, and ewes get fat and are sold at an advance of two or three dollars above what they cost the year previous; therefore wool is but a secondary consideration with the sheep grower. The Southdown is one of the best breeds for marketing. The same farmer with precisely the same kind of land, two or three hundred miles from market, without a railroad communication to send forth his lambs and fat sheep, would keep and grow an entirely different sheep for the reason that wool would be his object. The large sized Southdown say would weigh one hundred pounds; a common sized Saxony ewe would weigh fifty pounds; the Saxony ewe if well kept would shear three pounds, which would bring, if of the best quality, seventy cents a pound. The Southdown would bring forty cents the pound. The Southdown would eat twice as much as the Saxony, which would make just twice the difference in quantity. For keeping the hundred pounds of Southdown, he would receive for his wool one dollar and twenty

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cents, while for keeping one hundred pounds of Saxony sheep, he would receive for his wool four dollars and twenty cents—more than three times as much. It may be said by some that large sheep will not eat twice as much as the small ones; I have only to say that whoever will take the trouble to weigh his sheep and hay, will find the rule holds good with sheep, and the same is true of neat cattle, not with horses any more than with man. Small sheep of the same breed, shear more wool according to their size than the larger ones, as two small sheep have more surface than one that weighs twice as much; and therefore the smallest healthy sheep of any breed, gives more wool according to what it consumes than a large one; and another great difference between the Southdown and the Saxony is that the one has a thick, tight fleece, while the other has a loose, open one. Your soil here is, I have no doubt, as well adapted to raising the best and finest grades of wool as any in the United States. The same sheep kept here, will produce finer wool though not as much of it, than it would if kept on lime stone land. The difference would be so perceptible that a good assorter of wool could pick out and divide accurately nearly every fleece, should you divide a flock and keep one half on your soil and the other on a soil highly charged with lime.

The difference between the lime stone and soft water land is very great, even in the trees of the forest. A sugar maple standing on the former will make more sugar and of a coarser grain, than on the latter.

And with all your advantage for growing fine wool, I would not advise the keeping of the Saxony over the heavy fleece Marino, unless I know my man. In the first place I should want to know that his horses were not shod in winter. In the next place that he was a very industrious man, one who would rather work than play, and with all a patient man with a wife that prefers her own fire side in winter to that of her neighbor's, one who rather receives company than visits.

If you have such a man or set of men they can make more money by growing the finest and best wool than in any other way.

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For the man that does not keep his horses shod, cannot very well spend much time sleighriding, and if a patient man, if one of his sheep gets poor and weak, he will feed in such small quantities, as not to kill it by over-feeding, which is usually done, and if an industrious man he will see his flock at least three times a day. Every grazier should keep more or less sheep to destroy briars and bushes, and sweeten portions of his farm that need it, and for those farmers who raise wheat, nothing is so good as sheep to prepare the field for the crop.

The breed of cows best adapted to making butter, I regard as a matter of no consequeuce, only that they have been bred from the best of milkers, and are the right shape, with small necks and horns, broad and straight backs, wide on the hip, with thin thighs to make room for a large bag. The same formed animal for a good milker, would, as a general rule, be the best shape for fatting.

For beef cattle, those that give the most pounds of choice meat to the quantity of poor or coarse pieces, are the best; and yet there are some cows of the very best form, that are poor milkers and worse butter makers. Every cow's milk should be tested, which is very easily done, by straining it in a perpendicular glass vessel, and letting it stand in a cool place until the cream rises. By this rule, the measurement of both cream and milk is easily made. The cow must always give a large mess of milk to be a first-rate butter maker, although some cows that give but small messes will make more butter than others that give a large mess. The first rate dairy cow must give a large mess and be rich with cream. A cow must be well wintered and well lined with tallow, to make rich milk. A cow will make more milk and butter by feeding her back her milk after it is churned, with bran or meal; but the butter is not so good, and will not command the highest price.

I have made forty-four and one-half pounds of butter from two cows in seven days; more than three pounds each, per day. They were well wintered and were fed back not only their own, but as much other milk, as they would drink. Their average

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weights of milk per day, was over fifty-four pounds. They were the best out of a lot of more than two hundred dairy cows.

I think I did not add more than one half of a pound per day each in the quantity of butter, by feeding back the milk, as it was at the time when the pasture was at the very best. This extra feed would have kept this large quantity up when the grass was not so good.

The butter was good—but not first quality, not so solid nor as highly flavored as that made on pure grass. I am thoroughly convinced that nothing that has ever been tried will make the very best of butter, except the grasses which I have mentioned. The butter made on the sweet scented vernal grass is as good as any when first made, but like that made from red clover when laid down in packages loses its flavor.

If the first quality of butter could be made from any or all kinds of roots, the Dutch would have succeeded in this, as they are, to say the least, as neat and untiring in their pains to accomplish this great object as any people on earth. Although their butter is good and brings the highest prices in the London market, yet it is not of the best quality, and never brings within five or six cents the pound of the highest price of our very best butter, nor do I believe they make much, if any, of the very best butter in England. Of this, however, I do not pretend to know, and only speak from facts that I have witnessed in the market, as a dealer and maker of butter. Last season, when butter was very high, there were large quantities imported. At that time nearly all the steam vessels purchased in the New-York market, of our best butter for their own use, not only for their out, but return voyages, whilst we were exporting Southern Ohio, Indiana and Illinois butter, not worth more than lard in our markets. If the English made the best of butter, the Holland butter would not bring the very highest price in the London markets, any more than in New-York.

The Holland butter brings in our Southern market the highest price, as none of the very best dairies are shipped to Charleston, Savannah or New Orleans; as there is a great demand in New-

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York for all of the best quality of butter made, and room for more. To make this butter you must churn all the milk as well as cream, and churn it before it sours, as the sour or rancid taste in the cream can never be eradicated from the butter. A horse is the best of all animals to churn, and no matter if he churns six hours, as the milk should be churned sufficiently cool, which should be tested by a thermometer, to have the butter come solid.

Firkins, before butter is put into them, should be soaked in strong brine, then filled with sweet hay and hot water, and be allowed to stand until the water is cooled. When the firkin is filled put a cloth all over the top, cover it over and keep it well covered with a brine made of salt, salt-peter and loaf sugar, until it is sent to market. When you have done all this, procure a tryer, and before sending to market, try every package, and if, at any time, your cows have eaten any roots, cabbage, or anything else they should not, you will find it in the butter. Go to market with your butter and sell it yourself, and take your wife along, as she is the best judge; as ladies rarely smoke or chew tobacco, and no man, that does either, can detect the finer flavor of the nicer qualities. Thousands of men and women have lived and died in good dairy countries, and never tasted a first-rate article of butter in their lives.

I said, go to market with your butter, yourselves, and secure a customer; if your butter stands the test, you will not have to go the next season. The factor who handled it the last year, will be anxious to buy your butter again, as he has his customers who do not regard the price, if the butter exactly suits; and the last year's butter, if good, establishes your character as a buttermaker, and will enable you to obtain a penny or two a pound over last year's prices.

I have said, the plow would nearly cease to be used on good grass-lands. The older the meadows and pastures, of the better quality will be the grass, and the day is not far distant when you will mow and pasture in the same field. As soon as the stumps are out, and the stone picked up, and the fields smoothed down, that operation will be commenced. The mowing machine and reaper, are destined to work as great a revolution in the agricultural, as did the spinning Jenny and power-loom in the manufact-

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uring world. By mowing and pasturing in the same field, you improve the quality as well as the quantity; your grass all becomes thick and fine, the best of which the cattle pick out, and what is left is much better than coarse hay, mown on newly seeded meadows. As pastures grow older, the thicker and finer the grass. On newly seeded timothy and clover, the stalks are hollow and coarse, and, if cut ripe, have but little more substance than straw. On the other hand, on old pastures, treated as they should be, the sod becomes four or five inches thick; neither heat nor cold, wet nor dry, can easily prevent a fair crop. The stalks of the different kinds of grass have nearly or quite grown solid; the red-top and blue-grass can be cut any time before a heavy frost. There is a great diversity of opinion with farmers as to the proper time of cutting hay. My experience is, that coarse clover and timothy should be cut very early, for horned cattle and sheep. If permitted to stand until the seed ripens and the stalk dies, it becomes nearly worthless, while the fine grasses acquire solidity and sweetness by maturing, and become so thick that they rarely, if ever, seed; consequently no man can tell, without a critical examination of his meadow, at what time it should be cut. I will only add, that coarse clover and timothy without bottom, can hardly be cut too green, while timothy mixed with fine grasses, which have become so thick that the timothy does not head, should stand so long as the bottom is improving more than the top is loosing. Hay should be cured well for horses and sheep, so much as not to have a particle of dust. For horned cattle, if cut as it should be, when there is no dew nor rain on the grass, it can hardly be housed too soon, and if it moulds a little, so much the better.

Good hay is not only the basis of fatting, if you feed in winter, but all you need for wintering stock which is in good order in the fall. A skilful farmer can make healthy cattle grow all winter by taxing his ingenuity to see how much good hay he can manage to get them to eat; and this is the great secret of keeping stock. He who attempts the experiment, as very many do, of trying to winter cattle on the least possible quantity of hay, will find himself in the end, in very much the condition of the econo-

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mist who tried to see with how little salt he could winter his pork. When warm weather came, however, to his great astonishment, he had not only lost his salt, but his pork. The farmer, above all others should practice economy, but he should not starve, or even pinch his stock, or his farm, but should feed both on that which will give the best return. Grass and hay are cheapest and best for stock, and plaster is the cheapest and best renovator of your soil. One bushel of plaster to the acre would increase your pasture and hay at least twenty per cent. The higher the land the more good the plaster will do; more on the west side of your hills than on the east, for the reason that the lands that descend in the direction from which the winds generally blow, will receive the greatest benefit from the use of plaster, which is conclusive to me that it extracts growing qualities from the atmosphere.

The skilful farmer, with a practised eye, traveling in a country where plaster does much good, could tell from what direction the winds generally blow, with the same certainty that he could from the leaning of the tops of the trees in the forest, which is an indication that never fails. Place an Indian in the midst of your forests in a cloudy day, and he could point to the pole with as much accuracy as if the sun was blazing forth in the heavens.

Mr. President, I have said your soil was better adapted to grazing than grain-growing. I did not mean to be understood that wheat could not be raised on your soil to advantage. The dryest of your lands will grow fair wheat; but I do not regard yours as a natural wheat soil.

The farmer who raises wheat here should spare no pains or expense to secure his seed from the best wheat growing district, every year. Perfect seed sown here, of the whitest kind, would, in a very few years, if continued to be raised here, become red as hemlock-tanned sole-leather, and in the middle of the head some of the berries would be of good size, and much larger than the berry at each end of the head. The berries would continue to grow less, with a larger and deeper crease in them. While wheat raised on the best of wheat lands in Monroe, Livingston, Yates, and Seneca counties, would produce kernels of the same size, top,

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bottom, and center, if well cultivated; should they sow perfect wheat, it would take no longer time to restore original perfectness than it did to deteriorate from its state on less congenial soils; and hence the importance our lands for what they are best adapted, and trying to them so as to increase the natural crops to the largest Nothing but practical observation will give a thoroug ledge of these important truths, though science has do in aiding, and is continuing to do, and is destined to do

Every farmer should take at least one good paper de agriculture, of which there are many, and I know of no than the Genesee Farmer, though many others are equal The most intelligent farmer can find much to interest, a things which instruct, and will enable him to improve and give a much richer reward for his labors. As far must read and think for ourselves, and when we are science can unfold the latent or germinating qualities of t great care must be taken that we comprehend the chem ration or process by which these developments are dem and brought to our aid. The best chemist on earth c tell you, if you should go to yonder wood and bring hi of the surface earth, what germinating qualities it contai yet the experimental, practical farmer, could generally the timber, soil, and climate; and, I have no doubt, sho forest be cut down in February or March next, and b June or July, in less than ten days after it was burned, fi would be up all over, as thick as the hair on a dog, and frost would kill them though they had grown as hig ceiling; and the next year, most likely, sorrel would appearance, and the year after, white clover; and yet ne chemist or the practical man can find one seed of either why it is so.

There are some hidden mysteries which nature has ch to divulge, which have thus far baffled science and the c servation. And now let the chemists and practical men one common cause, to unlock the secrets of nature, an her mysterious workings, that her gods may proclai

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astonished world, that if man will only persevere, he shall "go on conquering and to conquer," until the hidden shall be made manifest, and the mysterious made plain to the most common understanding.

TIOGA.

I take this opportunity to reply to your circular, in relation to the agricultural condition of Tioga county for 1853.

1. The chief product of this county is wheat.

2. The increase this year is about four per cent.

3. The wheat crop of 1853 is decidedly better than the crop of 1852; but a large number of fields were very much injured by the insects, especially on the Susquehannah flats, and other low land. I noticed in this town (Nichols) last July, a number of fields that were nearly destroyed by the insect; the land was very rich and moist, being low situated. In this vicinity it has always been found that dry land, or land on which wheat ripens the earliest, escapes the ravages of the insect the most. There has been a large amount of spring wheat raised in this county this year; a considerable number of the crops yielded over 25 bushels per acre.

4. The rye crop is about the same as last year, or 1852. The number of acres raised increase annually, and the crop is valued much more than formerly. It is the best crop we have to seed after, or with.

5. The barley crop is five per cent better than in 1852; large quantities are being raised annually. Fifteen years ago it was a rare sight to see a field of barley in this vicinity.

6. The corn crop is fifteen, and by many is supposed to be twenty per cent better than in 1852, in this vicinity. It is the best crop that we have had in a number of years. The crop unusually sound.

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7. The oat crop is twenty per cent less than in 1852, and the grain unusually light. Owing to the high price this grain has demanded for the last four years, a great amount is raised annually. The lightness of this crop is owing to the hot, dry weather we had in June.

8. Buckwheat: this crop was twenty-five per cent less than last year, but a considerable amount sown.

9. The hay crop is about ten per cent more than last year, although a majority of the old meadows are mere nothing, especially on hill land. A majority of new meadows were very good, and yielded like meadows used to in former years. The old meadows on hill land will have to be plowed up, for they are somewhat exhausted.

10. The potato crop is about one hundred per cent less than in 1852, and considerable rotted and constantly rotting. Owing to the great fall in the price last year, there was not near as much land planted as in former years.

11. The vine crop is about five per cent more than in 1852, generally; not much raised.

12. The fruit crop is two hundred per cent less than in 1852, a number of orchards not bearing more than five bushels.

5. The increase of number of acres for some certain crops is ten per cent, while on other crops the decrease is five per cent. As a general thing the increase on almost every crop, yearly, is considerable, especially on crops that yield well and produce a good price. The increase of new land cleared in Tioga county amounts to about 3,000 acres annually. There is hardly a day in the latter part of the summer, if the weather is dry, but one will notice a number of smokes from new fallows.

6. The increase on horses and neat cattle over 1852, is five per cent; on sheep, ten per cent. The great increase on sheep is owing to the great advance in the price of wool and mutton within two years. It is presumed that 4,000 head of neat cattle are driven from this county annually, and 15,000 sheep, and a

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great number of horses. Tioga county is visited monthly by a great number of drovers. There must be over 100 droves of sheep driven through Nichols annually, averaging 1,500 per drove and near that number of droves of cattle, averaging 100 per drove.

Of horses, we have a great variety. The county is getting full of good horses. Among the variety we have a large number of the Mambrinos, and descendants of the Duroc, Chance, &c., but none of the Blackhawk or Morgan breeds.

Of cattle, a large majority are of the old fashioned breed. A great number are being mixed with the Short-horn. It is thought the Short-horns are the best for beef and milk. Mr. G. Pompilly, of Owego, and a few families in the north part of the county, have done a considerable to improve the breed of cattle in this county.

Of sheep, we have a variety of breeds. The Southdowns are fast taking the place of the Merinos and Saxons. The Southdowns are large and hardy, and the yews are very apt to have two, and occasionally three lambs at a birth.

7. There is an increase of scientific attention to farm cultivation. The prejudice against the sciences is gradually vanishing, but there is plenty of room yet.

8. Drainage has received little or no attention in this county. There has been a number of swamps and wet places drained, but no thorough draining, as I can learn. In my last year's report I think I stated that there was no land in this county that needed draining, but I have changed my mind; there is considerable land to which thorough draining would be of great advantage.

9. Since the completion of the New-York and Erie railroad, back farms have increased 50 per cent or more, and farms lying along the Susquehannah river have increased from 8 to 15 per cent. Land is constantly on the rise, and strangers are constantly moving in.

10. The place where the products of Tioga county are marketed, is Owego, and every depot in the county, beginning in the

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east at Campville, then Owego, Tioga Center, Smithboro, Barton, and Waverly. The expense of grain from Smithboro to New-York is about 20 per cent of its value here, and of butter about 6 per cent. As you go east or west from Smithboro, the price varies according to the distance. The usual method is to hire a car that will hold about ten tons. The price charged from Smithboro is $59 or $60, a raise of about $20 per car within a few months.

To give the reader an idea of the amount of business done in the grain, &c., trade, of Nichols, I will notice one firm. O. A. Barstow & S. Kirby have taken in, within three months, of oats, 50,540 bushels; wheat, 15,634 bush.; buckwheat, 1,937 bush.; corn, 1,000 bush.; rye, 980 bush.; barley, 300 bush.; butter, since 1st of September, 16,500 lbs.; from 1st of May to September, 15,000 lbs.; this account was taken the 26th of December. One other merchant, E. Smith, took up to Dec. 22, of oats, 12,000 bush.; corn, 400 bush.; buckwheat, 1,300 bush.; butter, 4,000 lbs. The increase of butter over 1852, is fifteen per cent.

The price of produce, &c., is wheat, $1.31; corn, 62½ cents; oats, 40 cents; buckwheat, from 44 to 47 cents; buckwheat flour, $1.75; butter, 14 cts., has been 20 cts.; horses, from $90 to $130; oxen, per yoke, $90 to $120; cows, $20 to $25; sheep, from $2 to $4.

ROBERT HOWELL.

Nichols, Dec. 29, 1853.

TOMPKINS.

The undersigned, in making this annual report, takes pleasure in stating, that the agricultural society of this county is in a most flourishing condition. The list of membership has steadily increased from year to year, until we now stand in the front rank with other and older societies in the State.

Our annual fair, for this year, was held at Ithaca, on the 6th and 7th days of October, and was very largely attended by the farmers and mechanics of the county.

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The show of the different breeds of cattle, was unusually large. In the class of Short-horns, there were representatives of many of the most celebrated herds of this and other States, including some fine specimens belonging to Mr. John G. Williams, from the herd of the late Hon. Henry Clay. The first prize on bulls, in this class, was awarded to Mr. Joseph McGraw, jr., for his bull, "Grand Duke," bred by S. P. Chapman, of Madison county, a superb animal, and one that will be of immense benefit in the improvement of the stock of our county.

Mr. McG., exhibited several other fine specimens of this breed of stock, among which was his splendid cow, "Cream Cup," which carried the first prize as the best milch cow. This magnificent cow has performed some of the most remarkable feats at the pail, of any cow on record; thereby proving that this justly celebrated breed of cattle are valuable in the dairy as well as the shambles. "Cream Cup" has yielded two pounds and a quarter of butter per day, for thirty days in succession; and her milk weighed sixty pounds and a half per day, for the same length of time.

In the class of Devons, there was a fine display, and spirited competition; confined, principally, to the herds of Mr. Levi Williams, and Messrs. M. J. & S. Robertson, and among them many animals possessing points of rare excellence.

A bull of this breed, shown by the Messrs. Robertson, would be hard to beat anywhere. There were, in both herds, several pairs of closely matched steers, which attracted much attention. Of grade and native cattle, there was a fair but not great number on the ground, with the exception of working oxen, of which there were some beautiful specimens; a pair of twin cattle, exhibited by Mr. Purdy, and raised by Mr. Wadsworth, of Geneseo, were truly excellent, so closely matched, that they excited general admiration.

Of sheep, there was but few in number, compared to former occasions, but of good quality. Several pens of French merinos, shown by Mr. Reed Burritt, were very much admired. Mr. Charles Morrell, exhibited some fine Saxons; and Mr. E. L. B.

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Curtis, some Spanish merinos, that were good specimen
race of sheep. There were also some fine animals of th
down and Leicester breeds, that were fair though not su

Of hogs, there were but few, and they of the Suffo
which are becoming favorites among us.

The show of horses was unusually fine; a larger nu
of a better quality, particularly of brood mares and co
we have usually had on exhibition.

The show of poultry was very extensive, comprehen
or nearly all the fancy breeds of the day.

The in-door exhibition was very meager in comparison
exhibitions, with the exception of fruit, of which the
large variety, and of the best specimens; this being o
largest fruit growing counties in the State.

The plowing match was equal to any former one; th
twelve entries, nearly all doing their work beautifully.

The annual address was delivered by the Hon. T. C.
Genesee county, and was replete with valuable instructi
farmer, and was listened to by a large concourse of the
Tompkins. It was voted to have it published in pampl
for the use of the society.

Thus ended our annual fair for 1853, which has give
couragement for the belief that our society is establisl
a firm basis, and that great benefit has been derived by
ing community through its efforts.

JAMES R. SPI
Pr

N. Crittenden, *Secretary.*

It is with great regret that we announce that Mr. S
shortly after this report was made, suddenly killed by
a most estimable man, a zealous agriculturist, whose lo
tire community deplore.

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ULSTER.

The annual fair of the Ulster county Agricultural Society was held at the village of New Paltz, on the 4th and 5th days of October, 1853. The fair was not as well attended as in former years. The exhibition of stock was good, equaling the display of the year before; the vegetable productions and manufactured articles fell considerably below, in quantity. At two o'clock of the second day the annual address was delivered by Jacob Hardenburgh, Esq., of Kingston.

The society has not had the support of the practical farmers of the county that its importance demands, yet its favorable effects are strikingly perceptible throughout the county. Draining by blind ditching, and other modes of reclaiming lands before worthless, have been resorted to and have brought into use lands that were formerly supposed to have no value at all; yet the state of agriculture in this county is far behind what it ought to be, especially as we have a home market for produce better than that of New-York city. The immense number of men and horses employed on the Delaware and Hudson canal, the flagging stone, cement and lime stone quarries, leather manufactories, and various other branches of manufactures and trade, require more grain for consumption than is produced in the county. Besides, the immense water power, at present unoccupied, when brought into use, will increase the consumption to a greater extent than the county can reasonably be expected to produce under the best and most improved system of cultivation.

Farms and field crops.—The first premium on improved farms was awarded to James Kiersted, of Kingston; the second to George A. Shufeldt, of Kingston. The first premiums on wheat, corn and oats, were respectively awarded to C. M. Van Leuven, of Kingston. Yield of wheat per acre, $35\frac{1}{4}$ bushels; corn $87\frac{26}{32}$; oats $75\frac{1}{2}$.

Officers for 1854.—Joseph Arnold, President; Peter Crispell, Jr, Wm. H. Trumpbour, Richard Hardenburgh, Philip Hornbeck, Vice-presidents; S. S. Hommel, Recording secretary; Wm. Cockburn, Corresponding secretary; R. A. Chipp, Treasurer; Peter H.

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Brink, C. M. Van Leuven, John Crispell, Ebenezer Lou
Elias Depuy, A. B. Preston, Edmund Bruyn, David L.]
Jacob Elting, John Griffiths, F. F. Tillson, Wm. Soper,
Hasbrouck, E. Sherrill, Herman Reynolds, Abraham
Charles Davis, Abraham D. DeWitt, Executive committe

JOSEPH ARNOLD, *Pre*

THURSDAY, *Dec.* 27,

DEAR SIR—You have called the atttention of the sec
our County Agricultural Society to certain inquiries cont
your circular. That circular has been sent to me to giv
quisite answers.

1. The chief products of our county are corn, rye, buc
oats, wheat and potatoes—very little barley being raise
county, but quite a quantity of hay.

2. The crop of corn this year is larger than it has been
years past; that of rye, the yield rather less than an avera
the wheat crop quite as good and perhaps rather better
former years; the crop of oats rather more than the usu
the crop of hay no more than about a two third crop, i
quence of the drought of the season of 1852, and the pot
not half as good as the year before, in consequence of the

3. The number of acres under the cultivation of eac
cannot estimate severally, it being about the same, or p
few more acres than will be found in the account of the
sus of the county. The quantity of corn produced will l
nearly average from twenty-five to thirty bushels per
very generally of an excellent quality. The number of
of wheat will I think average about fifteen to the acre
rye not more than twelve or thirteen; that of buck-whe
bly about fifteen to twenty per acre, and our potatoe crop
exceed from thirty to forty-five per acre; the oat crop
bably average about from twenty-five to thirty per ac
quality of our wheat generally is rather inferior to the
wheat, but some of our samples of Mediterranean wheat
pare in appearance and in weight with any of the same ki
any where.

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4. Very nearly answered in answer to question 3d.

5. There is undoubtedly an increase of the number of acres tilled in the county, and there appears I think to be an increase of number of acres in raising hay.

6. There is I think rather an increase in the quantity of stock raised in the county, but mostly in horn cattle and horses. The breeds of horses most common in this county are descendants from the Messenger, Duroc, Mambrino, and a few from the Norman and Canada stock. The breeds of horn cattle are mostly of the native. Some very fine Durhams, a few Devonshires, and many that are Durham mixed with the native. The number of sheep in the county is comparatively small. Our hogs are mostly of the Berkshire, mixed with the common stock which was kept here before much attention was had to improvement. The breeds of cattle that sell but by weight (are the native and those that are of mixed blood) to the butcher in some portions of the county; the Durhams are considered rather superior as milkers, but throughout the whole county I believe the native is considered as good as any.

7. There appears to be more attention paid to scientific farming than formerly.

8. Drainage has been but very little attended to in the county, but where it has, has been attended with marked success, making lands that were too wet for cultivation so that they are cultivated at a much greater profit.

9. There has been an increase in the value of farms generally.

10. The place where the products of our county are marketed is at home, that is within the bounds of our county, where much more is required than there is produced. A large part of the business of the county is done along the Hudson and Delaware canal, and in the towns north and south of it where we have many large tanneries and where the flaging stones are got out amounting yearly to about $1,000,000, and very large quantities of water lime or cement are got, which together with the lime got out for New-York market amounts in all probably to half a million more. In

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consequence of which we have a better market in the county than can be had any where within the State for our products. The amount of expense in raising and marketing our products amounts to about 40 per cent out of the worth.

Yours respectfully,
PETER CRISPELL, Jr.

B. P. Johnson, Esq.

WASHINGTON.

The thirteenth annual fair of Washington county was held at Granville Corners, on the 7th and 8th days of September. The weather proved very unfavorable for the exhibition, and the excessive drought which prevailed in the northern part of New-York, during the past season, caused the exhibition to fall far short of what it should and would have been under more favorable circumstances. Yet something of the prosperity of the county might be seen from the exhibition presented. The show of cattle and sheep was very meager, and much inferior to that of former years. A few specimens of French merinos were presented, which attracted much attention and were highly commended. This breed has been but recently introduced among us, and their value is a matter of doubt among many, although their magnificent proportions and heavy fleeces are considerations of interest and importance. The chief attraction, and deservedly so, was the show of horses; much of the Morgan and Black Hawk breeds have been introduced into our county, and are very generally admired; their name and qualities being too well known to require any description. Within the past year a celebrated horse has been introduced here, known as Rattler, whose owner claims for him a strain of Hamiltonian blood, and whose trotting properties are much esteemed. As much is being done in the way of raising horses for the turf, this animal is regarded as a valuable addition to the increase of fine horses in this part of the State.

The show of farm products was not a fair index of the growth and prosperity of the county, one reason of which may be found in the fact, that almost the entire portion of the farming com-

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munity are engaged in the manufacture of dairy products, in that part of the county in which the fair was located; consequently we had a respectable show of butter and cheese.

In the afternoon of the second day of the fair, a practical and highly entertaining address was delivered by the President Milo Ingalsbe, Esq., to a large and interesting audience.

At our winter meeting, premiums were awarded for wheat, corn, potatoes, beans, turnips, carrots, oats and garden seeds.

For the best acre of winter wheat, the first premium was awarded to Isaac Wood, of Whitehall, yield 45 bushels and 12 qts.; second premium to S. Wood, of Argyle, 31½ bush. per acre. First premium for the best acre corn to A. F. Cramer, of Granville, 88 bush. per acre; second premium, to Jacob Bump, of Hartford, 80 bush. per acre; third premium to Henry Holmes, of Greenwich, 65½ bush. per acre; fourth premium to A. Willard, of Hartford, 50½ bush. per acre.

Officers for 1854:—President, Hon. Le Roy Mowry; six Vice-presidents; Recording secretary, James S. McDonald; Assistant secretary, H. H. Ingalsbe; Corresponding secretary, Dr. O. Cook; Treasurer, Ahia Eldridge;

Our next annual fair and cattle show will be held in Cambridge, or near the line of the Albany and Rutland railroad.

All which is respectfully submitted.
JAMES S. McDONALD,
Recording Secretary.

WAYNE.

NEWARK, Wayne Co., N. Y.,
December 26th, 1854.

Gentlemen—I forward you the list of officers for the Wayne County Agricultural Society for the next year:

President, De Witt Van Slyck; Secretary, A. G. Percy; Corresponding secretary, E. W. Sylvester; Trustees, I. D. Ford; seven Vice-presidents; Executive committee of five.

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NEWARK, WAYNE CO., *Dec.* 20, 1853.

Dear Sir—The circular of the New-York State Agricultural Society, arrived by due course of mail, and I now proceed to answer the several questions therein propounded, according to the best knowledge I have been able to obtain.

1. "The chief product of your county?" Wheat.

2. "The increase or decrease this year?" Decrease, about ten per cent., owing to the ravages of the wheat midge; and should they continue a year or two more it must greatly lessen the breadth of land sown of this most important crop.

It cannot vary far from thirty thousand acres, and there were over six hundred thousand bushels grown in the county, as returned by the census taken in 1850. The quality is of the best kind grown in any part of the State.

4. The next in order is maize, or Indian corn; the most valuable crop the farmer cultivates, and should the midge continue its ravages, will become the most important product of the county. No county in the State is better adapted to the growth of this beautiful plant than Wayne. The soil is for the most part a deep sand and gravelly loam, underlaid with limestone, and lying along the south border of Lake Ontario, is not liable to early frost. The average quantity of corn, 45,000 bushels, or thirty-five bushels per acre.

Barley and oats are grown in great perfection, and yield remunerating crops. The lands of this county are not sufficiently heavy for producing large crops of barley. The yield will not exceed twenty-five bushels per acre, but of good quality; and the money value of these two articles of commerce would be equal to the value of the corn crop.

Rye is but very little grown. Peas ditto. Buckwheat is grown more than formerly, but the yield is poor this season, owing to heavy rains the first two or three weeks in September, which kept them constantly wet.

5. Increase of the number of acres is continually advancing, by bringing the swamp lands under cultivation, showing an im-

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proved husbandry that is due to a more general reading of agricultural works, and the influence of our well conducted society for the promotion of agriculture and the mechanic arts.

6. This is a voluminous question. Increase, in the whole combined. Decrease in cattle and hogs, and an increase in sheep and horses. The breeds of cattle most common are native. Some attention is paid to improve the cattle kind by crossing with the Durhams and Devons. Both of these fine breeds have their advocates, but from the best information I am able to obtain, the Durhams are the most approved when crossed on our native stock, both for the dairy and market. They are better size than a cross with Devons, more aptitude to fatten, and are superior milkers. A cattle feeder said to me "they were worth twenty-five per cent. more for feeding than the common stock of the country. There is not as much attention paid to the improvement of cattle as there should be, or would be, were it not for the high price of good Durham bulls; making them wholly beyond the means of many farmers who own small farms, and have a desire to improve their stock, but cannot, having no surety that they will be patronized by their brother farmers, provided they should obtain one. Of horses, Wayne county possesses very many noble animals. The noted Morgans have lately been introduced. It is doubtful of their answering the expectation of the people, because of their small size. They will be much better adapted for the road than the plow. The Samsons and Messengers are the most noted horses of the county, and stand high in the estimation of the farmer for draught horses.

Sheep.—No stock in the county are making such rapid strides towards perfection, as are these innocent animals. More attention is paid to the purchase of choice animals, for the purposes of propogation, than at any former period. Nothing but supineness on the part of the farmers, can prevent this county from becoming one of the best wool-growing sections of the State.

Swine.—There are all of the best breeds known, to be found in this county: such as the Berkshire, Leicester, Suffolk, Grass, and their crosses.

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7. The increase of good cultivation is certainly advancing, and may justly be chargeable to the knowledge obtained by the perusal of more scientific works than those that have preceded the present race of farmers.

8. Drainage has received some attention; and its advantages are, to render the soil more dry, and of easier tillage, making the air more salubrious, less unhealthy, and better adapted for the habitations of civilized man.

9. The value of farms is on the increase in this county. Many parts of it is comparatively new, and some years must elapse before the stumps will all disappear, and give it that beautiful appearance of older districts.

Of fruit there is an abundance of the choicest varieties. Some idea may be formed of the quantity grown, for more than seventy thousand barrels have been shipped from the this county in a single year of apples alone, besides vast quantities of dried peaches.

10. The products of the county are principally sold to the merchants and millers, residing in the villages along the line of the canal and railroad which passes through the county. The value of marketing will not vary far from two per cent.

Very respectfully yours,

A. G. PERCEY.

FARM REPORT.

The committee appointed for the examination of farms offered for competition for the society's premiums for 1853, regret to say that only three farms were presented.

The cause for regret consists not in the want of numbers for mere matter of show and boasting, but that from a variety of modes and methods of farming, comparisons may be drawn as subjects for profitable reflection, to be adopted or rejected by the intelligent practical farmer, in his future operations, as circumstances may suggest. No farmer, however humble, so conducts his farming operations as to avoid the possibility of influencing, for good or evil, others in the same occupation, who have opportunity of witnessing his doings.

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It may be considered doubtful policy to have annually, reports of the most profitable results *only* of a few of our best farmers, thus diverting the funds of our society from their proper channel, when they are professedly accumulated for common benefit, to *puffing* and paying the few for their commendable acts, leaving their errors *untold*, when their publicity possibly in one case could be of more general advantage than the whole fair side of the picture.

Allow an applicant a premium upon his farm as best conducted in the county, very soon many eyes are turned to notice his operations, and *perhaps* the unprofitable as well as profitable policy is adopted by the new beginner, and others not accustomed to thinking for themselves, to their very great damage, thereby destroying confidence in, and usefulness of reports, for the simple reason that they lack the most essential ingredient, called *common honesty*.

It may be due to ourselves to say here, that whatever may appear in this feeble report, suggestive or noticed unfavorably, must be considered as merely our own judgment, founded upon our adopted theory and observation, with some experience in farming generally, with due deference to the judgment and experience of others; our object being to call attention to disputed points, that by close attention and well directed reliable experiments, we, with others, may learn to know the true way, and walk therein. To become correct and invariably successful, is the result of more time and experience than has been enjoyed by your committee, and proves to us, that perfection need not be looked for in any individual farmer, although by personal effort he may attain a high position.

Abram Carl's farm.

On the 6th of June, we viewed the beautiful farm of Mr. Abram Carl, of Palmyra. A heavy rain storm on that day prevented our spending as much time upon his premises as could have been pleasantly and profitably occupied, but Mr. Carl being one who seems to understand and attend to his own business, was not long in giving a general outline of his way of farming, and the results, which would be a profitable lecture to those who are yet willing to proclaim that farming is an "uphill business."

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This farm contains about two hundred and eleven which about forty acres are occupied by road and timb timber lot of twelve acres, principally thrifty oak, is be situated upon an elevation that commands a view of a section, that can but convince a person who enjoys it, tha county deservedly ranks among her sisters in agricultu first class.

Under the protection of this valuable grove, which ch west and northwest winds, Mr. Carl has recently erected and barn, very convenient and completely finished; abou in a rich loamy soil, well adapted to the purpose, is hi fruit orchard and garden, all fronting east, upon a ro travelled, leading a short distance south to the village of which is his market.

The soil of this farm, as far as ascertained by your co is a gravelly loam, easy to cultivate, and well adapte growth of grain or grass, sufficiently watered, a pleasen of elevation, and with its desirable location, all consider it as many, and perhaps more naturally valuable propert any other in our county of as many acres.

Forty-five to fifty acres of wheat are harvested annuall ging about 1,150 bushels, or about twenty-three bushels upon a clover sod, plowed once in July, if a two year so August if one year, and upon summer grain stubble.

Mr. Carl's reason for giving the oldest sod the earliest is worthy of notice by those who hold that clover will upon sod once plowed. The older the sod, the more labor with the proper implements to sufficiently pulv soil and subdue June grass and other vegetation that smother or outgrow clover that is to be sown upon t field the following spring. He sows about ten pounds cl to the acre, and thinks that sufficient; gets good wheat and barley stubble, but best from barley; raises the Soul' has growing, this season, fifty acres wheat, nine of barl oats, and thirty acres corn, all looking well; uses a plow

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his corn, prefers it to a cultivator, because it cuts off the corn roots which he thinks they need to improve the yield of corn; gets about fifty bushels per acre; keeps about fifteen head of cattle, including two yoke of oxen and eight cows; from one hundred to two hundred sheep, prefers two hundred on his farm; keeps two horse teams and some colts.

Mr. Carl's farm looked clean and clear from weeds; but we noticed a small weed, with a white blow, resembling May weed, which he concludes is of little consequence, as it can do but little injury.

This circumstance is noted for the reason that this, or a very similar weed, is becoming a troublesome affair in other locations, and we feel bound to warn our brother farmers to beware that it does not get too much advantage of them.

The fences are of various kinds—posts and boards, stone wall, with cross stakes and rails, and common rail fence all in good order. Plows from eight to ten inches deep, and thinks deep tillage absolutely necessary to produce profitably.

Messrs. Streeter & Brothers' Farm.

On 20th June, we visited the farm of Messrs. Streeter and brothers, near Clyde, but regret, that for reasons known to themselves, they determined to withdraw their proposition, but Mr. Daniel Streeter invited us to go over the farm with him, which we did, and were exceedingly gratified. He conducted us to a central elevation, where we could see most of their valuable farm, containing three hundred acres, upon which the present owners have made valuable improvements, during the few years it has been theirs, in fencing, under draining, barns, sheds, cow-house, all spacious, substantial, and well located; also a hydraulic ram, that brings a pure spring of water to their house, from thirty to forty rods distant. Here we could view large and luxuriant pastures, dotted with various kinds of stock, of imported and improved varieties, in abundance, including their dairy stock of thirty cows, many sheep, colts, &c., &c.

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The crops looked promising, and gave evidence they had been placed there in the best manner. Our attention was particularly attracted to a beautiful field, containing sixty acres of white chaff Soul's wheat, that, from appearance, would produce, at least, thirty bushels per acre.

Mr. Streeter remarked, "he did not like to plow both ways between his corn rows, as that would cut the roots on four sides instead of two sides of the hill." The produce of their farm is mostly disposed of at their trading house in Clyde, which arrangement appears to make them satisfied with their profits. We hope our farmers will hear from them at some future period, in a manner that will be interesting to all.

Mr. Job Travis' Farm.

We went directly from the farm of Mr. Streeter to the farm of Mr. Job Travis (colored man,) of Galen, containing 85 acres with 55 under cultivation. He bought this farm for $33 per acre only six years since, during which time, with limited means, and his own personal and well directed industry, he has repaired and improved his dwelling, making it convenient and in all respects well adapted to his wants, and tasty in appearance; built one barn 36 by 48, tool house and horse barn 30 by 40, with stone wall basement under both, in which he has well arranged stalls and shed for stock, and where the manure is kept sheltered until put upon the land. Water for stock is conveniently situated in his barn yard, brought from a field of higher ground in pipes where the head or fountain is obtained from under-drains made of stone upon a once cold wet side hill, where there is now wheat growing with the appearance of a naturally warm, dry soil, well adapted to the growth of grain or grass.

Many other places on this farm once mire holes are reclaimed in the same exemplary manner, where good crops are now growing of corn and wheat, all appearing to be no other than fields clear of stone and stumps and of the most fertile dry soil, which artificial appearance so desirable is the work of the commendable industry of the owner; many rods of these stone under drains are made when the stone that once cumbered the ground obstructing culti-

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vation and making an unsightly appearance, are now doing the kind office of draining and warming the land, causing it to produce crops that will repay the outlay.

Here were growing twenty-five acres of wheat that for uniform growth and all the most promising appearance was most gratifying, all on ground plowed after the middle of August, and but once. One 19½ acre lot, for an experiment, had been temporarily divided, pasturing sheep upon one part and cattle upon the other, and showing a very perceptible appearance in the wheat in favor of the sheep pasture over that portion pastured by cattle. Such experiments upon any branch of agriculture should be more frequent by all practical farmers, the result of which being made public could have none but a profitable tendency. After once plowing for wheat, the land is fitted for the seed by harrow and cultivator, which is put in with the drill. The last crop from above named 19½ acre lot was 600 bushels, a fraction over 30 bushels per acre, which is about a fair average yield annually on his farm.

His cornfield was clean, his corn standing even and in very straight rows, looking thrifty, worked with a cultivator and the surface kept level as possible, the plow rejected because it cuts the corn roots and uncovers the long manure and turns up the undecayed sod. His yield of corn is annually from 55 to 60 bushels per acre.

Has eight horses including his teams, one valuable matched pair which took the first premium at county fair in 1852, at Wolcott, also a beautiful bay colt aged three years, of the "Morgan Tiger" stock. Should his stock inherit his strength and beauty, Galen may soon boast her fine horses. His cattle consist of four cows and a few head of young stock, some native and some Durham, with promising *facilities* for improvement. Has 60 sheep of good quality, and some 15 to 20 porkers of various sizes, all in thriving condition and well cared for, with seeming close attention to have no stock but best quality that will prove most profitable.

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There could be more said in favor of these farms as upon each of them there were many features worthy of commendation and but few to be considered doubtful, but in the absence of a list of questions to be presented to competitors by our society, (which we would respectfully suggest for the future,) we are under the necessity of adopting a rather racy and indefinite examination and report, hence our apology, should our friends, the competitors discover on our part any oversight in not calling attention to more of their commendable doings. One point in the cultivation of corn, which is from present indications becoming our most important crop, your committee deem necessary of note that a prevailing and unnecessary controversy may be settled.

Mr. Travis rejects the plow in his corn cultivation because it cuts corn roots, &c.; Mr. Carl adopts it because it cuts the roots which he thinks necessary, and Mr. Streeter uses the plow one way not liking to disturb but half the corn roots. Now be either of the two first named, who are the extremes of opposition, right or wrong, which they cannot both be, it leaves Mr. Streeter only half right and he will have to bend only half as far as one of the others to be entirely right; and we hope these gentlemen, or some others will decide by close experiment this disputed point and make the result public; which one point, when settled, will repay all money paid in premiums and the time spent in examining and comparing farms and their management.

We were disappointed in not finding more attention paid to the cultivation of carrots and other roots for winter feeding of stock upon these choice and generally well conducted farms, which we here respectfully suggest as profitable on any farm.

In conclusion we award the first premium of $12 to Mr. Job Travis, (colored man,) of Galen, and the second premium of $9 to Mr. Abm. Carl, of Palmyra.

JOS. WATSON,
JOEL HALL,
JAMES P. BARTLE,
Committee.

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REPORT—FARM ACCOUNTS—JOSEPH WATSON'S.

The committee to whom was given the examination of Farm accounts, presented for the premium, have received but one: the yearly register kept by Joseph Watson, of Clyde, from the first of the year 1852, till the time of the last annual meeting, a period of eleven months, but embracing substantially all the operations for the season.

Although there is no competition, the committee are fully satisfied in awarding to Joseph Watson the first prize offered by the society, both on account of the very plain, simple, and intelligible manner in which the account is kept, and the excellent specimen of skilful and profitable farming, of which it furnishes the evidence. Some of the committee having formerly examined this farm, are satisfied that his profits are not overstated.

The committee consider that the specimen of excellent farming thus presented, showing a net profit of nearly $800, on the different crops, or a profit of about $400, after deducting the expenses of tile-draining, new implements, family provisions, goods, clothing, taxes, &c., on a farm of less than 50 acres, as truly encouraging to all farmers on a small scale, and as affording a striking proof of the accurate knowledge which cultivators of the earth may arrive at, by preserving precise accounts of all their expenses, profits and losses; and we cannot but regard the too frequent practice of neglecting such accounts as almost as detrimental to good farming, as guessing at the proceeds and dividends would be to the interests of the stockholders of a bank or railroad.

Some small improvements might be made upon the specimen of book accounts, presented by our friend Watson, which would perhaps suggest themselves to farmers, or more properly, they might prefer some alteration in a few particulars; but the committee regard them as not essentially derogating from its excellence and value as a whole.

Respectfully submitted,

JOHN J. THOMAS,
GEO. W. CUYLER,
Committee.

PALMYRA, *March* 22, 1853.

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WESTCHESTER.

The practice of making annual reports by the County Agricultural Societies for the use of the State Society, is a good one, and enables the latter to obtain such information as will be essential in forming an estimate of the progress which has been made in agriculture and horticulture during the past season.

It is presumed, that with the great increase of periodicals devoted to this subject, the accumulation of facts by the numerous agricultural associations, there must be an annual advancement in knowledge in this department.

The annual fairs, where the most perfect animals, and the finest fruits are brought together by the stimulus of liberal premiums, that all may have an opportunity to compare them with their own, must awaken a spirit of inquiry, a desire to excel, that must lead to further improvement.

The county of Westchester held their fair as usual, although the exhibition was not so extensive in its display of choice fruits, nor yet as great in the number of high-bred animals, as on some other occasions from causes which were apparent and may in great measure be obviated in future. The annual address was delivered by B. P. Johnson, Secretary of the State Agricultural Society, and was an excellent and appropriate practical address. The display of fruits at our fair of 1852 was most extraordinary, surpassing any we have been able to give on any former occasion. The present season has been, not only in this section, but over most of the State, particularly unfavorable to the growth of fruit. Under these disadvantages our fair presented a variety of excellent apples, pears, grapes, &c., quite beyond any thing we had been led to anticipate, previous to holding it. We are under the impression it has not, with the exception of that of 1852, been excelled in many varieties of choice fruits. The owners of land in this vicinity are giving more attention to the growth of fine fruit and are appropriating more of their farms to this purpose than formerly.

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The falling off in the amount of fine stock offered at our fair for exhibition, may be accounted for from the following causes: the time of holding it this year was so soon after the State closed their exhibition, that many of the owners of fine stock, who had gone to the State fair with their choice animals a few days before, attracted by the higher premiums they offered and greater publicity—did not think their stock would appear so well so soon after enduring a fatiguing journey; we, therefore, lost the opportunity of seeing many high-bred animals of this class at our fair. We hope to obviate this cause of loss to our exhibition in future, by holding it at a period more remote or earlier than that of the State. We had also very unfavorable weather, which, with a deficiency of sheds to protect the animals from the elements, was quite sufficient to lessen the number of fine stock. It is our design to obviate this source of disparagement the coming season, by putting up proper sheds to secure all our animals from the weather, however unfavorable it may prove.

We cannot find any just cause of complaint against the owners of the fine blood stock, some rare samples of which have been imported by raisers in this vicinity within the past two seasons, for exhibiting their animals at the State Fair. Quite otherwise; for if these and similar sources of supply to the State Fair were cut off, its means of usefulness to the tens of thousands who annually visit its exhibitions would be greatly diminished. It will therefore be our pleasure to so far regulate the period of holding our fairs, as to enable the citizens of our county who cannot find it convenient to attend the State Fair to see many fine samples of choice blood stock, which, though owned in this county, has not graced the grounds of our exhibition.

When we have made ample provision for the protection of our stock from the weather, we shall deem the expectation just that all our citizens in the county who have superior animals for exhibition will not omit to have a place assigned them where they may be thoroughly examined by our farmers, that their fine points, rapid growth, and perfect development may be properly appreciated.

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The price of lands in the vicinity of New-York is so ı hanced in value that we cannot afford to keep poor Indeed, as a source of lucrative employment, a farmer ca afford to devote a very large portion of his patrimony unless it is of the choicest quality, and bred to supply overplus some more distant section of the country, for high price may be obtained. Several of our citizens hav imported from England lots of very fine, well bred which with proper training and crossing with those be sessed, must prove useful to the country.

We are inclined to believe, from the high price of lan section, there will not be any very great increase in the of stock, unless we more thoroughly embrace the roo system adopted in Great Britain. The increased de milk, and the high price of choice beef, and turnip-fe in the city of New-York promise good markets for al amount of these articles that may be raised.

The demand for milk has greatly increased within a past, and will continue to increase; and the supply m the cause alluded to, come from a greater distance, ı obtain a larger yield by using more thorough culture ar a larger amount of the various root crops in the absence feed for their use during the winter. Greater care mus taken in the selection of our animals, whether full-blooc or native stock—obtaining those that grow rapidly, kee ten easily if intended for the butcher—that give a large of cream and butter producing milk if intended for the

It is surprising how many more cattle can be well ke farm where the advantages of root culture are well ur This has been a sealed book to too many of our farmer the country, and applies with great force to all those located near our larger cities, where this system must b or the business abandoned, and the growth of choice almost every variety, suited to the climate, substituted ir This change has been going on to a greater extent wit years past than formerly. The Baldwin, Bellflower,

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Summer Pippin, Juneating, and Red Astracan among apples; the Bartlett, Seckel, Beurré Diel, and many others among pears, have all come under cultivation. The Isabella and Catawba grape have also awakened an interest, not only here but over this country, and recently on the continent of Europe, that was little anticipated a few years since. Vineyards of these grapes have been increased and a number of new ones formed. But the demand for this fruit has kept quite in advance of the supply, and promises to continue so, with the prospect of increased production for many years to come.

The culture of the strawberry, raspberry, (particularly the Antwerp) and the blackberry can be promoted with profit, and most of these kinds of fruit may be added to the ordinary productions of the farm in most locations near our large cities, to great pecuniary advantage; and, for the most part, they would be found in a few years to be a more favorite pursuit, and far more profitable in these localities than our usual staple productions.

The fact that railroads give such facilities to those living at a distance, whose cheap lands will often produce far more of the ordinary grain crops than our own, renders it quite important that this change of culture should take place. It is but a few years since many of our farmers began to supply the city with milk. Now from railroad facilities, one county after another, to the north, are adding this source of revenue and means of enriching the land, to their ordinary productions. Those who are engaged in the business of the dairy, while too long neglecting the root crop, to obtain a large quantity of milk-producing food from a small surface of ground, have also given less attention to the milking qualities of the animal, their real value, than the subject is entitled to. The price of cows that will give a large quantity of very rich milk, is seldom as high as their real value compared with an ordinary or poor one for dairy purposes. Some cows will give twice or even thrice the quantity of milk of others, but will not by any means require the same proportion of food for their support, nor demand the same amount of care and trouble the greater number would to supply the same quantity.

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A dairy of ten cows, for instance, might with care and a fair price be obtained that would yield as much as thirty small, ill-formed animals, or those disposed to take on fat, instead of producing milk—having fat-producing instead of milk producing qualities. These subjects are awakening a lively interest among our farmers, and the discussion of them of late, has occupied a prominent place among our "*Farmer's clubs.*" We are quite of the mind, they have not as yet received a moiety of the attention they deserve. When the farmer gives some share of his labor to the root crop for the purposes of the dairy and fattening cattle, he will soon be led to look to deep plowing, subsoiling, and under-draining as an indispensable part of the new system he has entered upon. These must not be neglected or the fine yield of carrots, turnips, parsnips, &c., will not be forthcoming in large quantities in due season. He will also soon discover by being able to enlarge the amount of his stock from this increased source of production a large increase of one very essential requisite to good farming, manure. This, when thoroughly mixed through the soil to a good depth, will show its real qualities in the succeeding crop.

In alluding to several kinds of fruits that could be cultivated to advantage in this section of the State we omitted to mention the plum. This fruit was cultivated formerly throughout this region of country and extended along the Hudson to the north of Albany with great success, but for the last twenty years, its culture, till quite recently, has been almost wholly abandoned, from the nearly total destruction of the fruit by the curculio. It is found by experiments made in *this county* during the past three years that this insect is so peculiar in its habits and looks so carefully to the preservation of its offspring, that, when the plum tree is planted so as to hang over the water, around the margin of a pond or stream, he will not sting the fruit. As this experiment has proved perfectly successful (and there is scarcely a farm that has not either a collection of water or stream or means of making an artificial pond for fish and plums at a shall expense, where a natural one *does not* already exist, we hope soon to see this delightful fruit cultivated extensively, to the profit of the farmer and benefit of our citizens. We anticipate, the agricultural community will

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take advantage of this discovery and surround every pond which they may form by removing the rich alluvial deposits that fill almost every valley of our county with this choice fruit, and raise it abundantly for their own use and for the supply of our markets.

The agricultural fairs we are willing to admit, are very useful to collect the great body of our farmers together to examine whatever is fine or excellent in the collection that they may raise to advantage. They also have an opportunity to behold such agricultural implements as have been recently introduced, and so formed as to save labor and give a good return for the money laid out in their purchase. It gives them also the opportunity of beholding the great improvement that has been brought about in the raising of stock for the dairy and the market. It is very clear, however, that most persons who visit these fairs get but a very superficial knowledge of the articles exhibited; and many see but a small part of them, from the pressure of the crowd, neither do they hear much of the address, that may be given on the "fair-grounds."

If what is seen and heard awaken a spirit of inquiry and investigation, by shewing what has been done in certain successful instances of the proper application of labor, they will soon prove beneficial. They may be the means of giving some farmers, who do not read or go far from their homes, a knowledge of some improvements that have not made their appearance within the horizon of their observation. In these respects they are useful. But to get a more thorough insight of what is to be known in agriculture and horticulture, and bring it home to the farmers, farmers' clubs must be established in the towns and villages, where every subject may be thoroughly discussed, and experiments instituted, the facts placed in the hands of committees, and proper reports made of all trials with manure, deep plowing, under draining, culture, cost of labor, amount and cost of the manure, and the rent in crops. Then from these collections of facts, proper basis for correct practice, useful and profitable to the farmer, may be secured. At these town clubs, the agricultural periodicals that are valuable, should be taken and read; and in time,

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many of the individual members would be induced to
for them, and introduce them into their families, who
now take the trouble to look into one. Had the works o
agriculture passed through the ordeal of discussion in as
similar to those alluded to, before they were sown broad-
many encomiums, among the agricultural public—the
between the two countries in climate, amount of solar
moisture during the warm season, carefully noted, be
were heedlessly adopted by thousands of our farmers,
prejudice (which still remains in many instances,) again
ricultural periodicals, would not now exist, and millions
would not have been thrown away by amateur farmers,
jury of themselves and those who followed their exan
made them, by their failure, the laughing stock of the
nity.

The farmers' clubs which have been established, have h
interesting meetings during the past season, and have inv
many subjects of interest, and the members are fully i
with the belief that they have been advantageous to the
generally, and their families, wherever they have been est
Some other towns in the county, which have not yet form
intend soon to follow the example, and establish one f
selves.

The amount of our premium list is gradually increa
was, during the past season, about one thousand dollars.
be observed by the report on field crops, that two premi
been given for fine crops of wheat. Premiums on corn
yet been awarded. The yield of potatoes, which in 185
some instances, very fine, and for which two premiu
awarded for superior crops, proved, the past season, ve
tive, and from the inroads of the potato rot, many farmer
greater part of their crop. In looking over the agricul
horticulture of the county, we are led to believe great
for the better are in progress. The mind of the comn
awakened to the importance of agricultural improveme
land is becoming better cultivated; more care is being

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selecting manures; more alluvial removed from the rich bottoms and swamps, and drawn upon the poor hills; and more trees planted to adorn the lawns around our dwellings, and along the borders of our public avenues. More discrimination is made in selecting food for fattening cattle, and for dairy purposes; more attention given to deep plowing and under draining, and a spirit of investigation is more manifest among all classes of the community; and horticulture is receiving a greater share of the attention of the farming public, since the partial failure of some of our staple productions, than heretofore.

All of which is respectfully submitted, by

R. T. UNDERHILL, M. D.,
President of the Society.

Croton Point, Dec. 30, 1853.

WINTER WHEAT—WM. H. MILLER'S STATEMENT—4 ACRES, 121½ BUSH.

The field upon which the crop of wheat was raised, was a good clay soil; in the spring of 1850, was planted with corn; in 1851, with potatoes, (without manuring,) yielding good crops each year; in the spring of 1852, it was sown with oats; after harvesting, 25 loads of manure per acre was applied, and turned under a good depth; on one half of the piece 12 bushels of bone dust were added, and plowed about the first of September, when two bushels, to the acre, of wheat was sown; plowed in with a corn plow, and harrowed well; one peck of timothy seed sown, and a heavy roller applied.

The quantity of wheat raised was 121½ bushels; measured by the legal standard measure.

(Affidavit of surveyor, and persons who harvested and measured, accompanies the statement of Mr. Miller.)

WINTER WHEAT—ABRAHAM B. HORTON'S STATEMENT—8 ACRES, 3 ROODS AND 16 RODS; 253 BUSHELS.

The land was plowed and harrowed, and one half manured with barnyard manure, sixteen loads to the acre, which was plowed in; the other half had 25 bushels bone manure, to the acre; and the seed, two bushels to the acre, was sown and harrowed in.

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The yield was 253 bushels; measured and weighed by standard measure and weight, and weighed to the standard bushel 64 lbs.

The affidavit of surveyor, and of persons who harvested and measured the grain, accompanies Mr. Horton's statement.

WYOMING.

I am informed that it becomes my duty, as president of the Wyoming County Agricultural Society, to report to you respecting its general prosperity. I do not know that the past year has been particularly marked in the history and progress of our society. I think it has maintained (to say the least) its character and usefulness.

One exceptionable feature of our annual fair is, the neglect of farmers and mechanics to exhibit their *own* products, while they manifest, by their general attendance, a lively interest in the exhibitions of others.

For this, there may be no remedy; but I am resolved to try to correct it, by visiting all the towns of the county, and having personal conversation with the farmers and mechanics on the subject. I have already entered on this mission, and will report to you, from time to time, respecting the general condition of our agriculture. I will, however, remark at this time, that there has been, within a few years past, a manifest improvement in the practice of our farmers, founded on an enlarged knowledge of their business, and stimulated by the correspondence and intercourse which they have with each other through the press and by means of agricultural societies.

This improvement is made evident by a more tasteful and convenient arrangement of farm buildings, by improved fences, by greater promptitude in sowing wheat and other crops, by a more thorough tillage, and by the use of improved implements, such as the wheat drill, the wheat cultivator, the reaper, &c., &c.

The subject of draining has not commanded general attention; and the sub-soil plow is almost unknown among us.

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The prominent and leading branches of business, are wheat and wool growing, with considerable attention to stock and dairy interests.

I thank you for the valuable journal of the State Society, which has been forwarded to me.

Respectfully yours,

HUGH T. BROOKS.

YATES.

The annual fair for 1853, of the Yates County Agricultural Society, was held at Penn Yan, on Thursday and Friday, September the 29th and 30th.

It gives us unfeigned pleasure to notice the recent growing interest in and prosperity of our county agricultural society. Some twelve years ago, our society was established, with scarce members enough to entitle us to the State appropriation. But to the shame of our farmers and mechanics be it said, but little *increased interest* was taken in the matter for three or four years, although our "fairs" during this time, were very good. For the succeeding two or three years, by the few noble souls who had always stood by it, never despairing of final success, it was fairly fanned into life from year to year, until in 1851, from the apathy of its members, and uninteresting nature of our "fairs," it was with many deemed questionable, whether it would be possible to keep up the organization any longer; but in this *crisis* it was sagely allowed to go to Dundee, in the extreme south part of our county, in the hope that it might there restore its wasted energies. The result seemed to satisfy its most sanguine friends; for instead of *dying out*, as was supposed by many it would, it, on the contrary, became inspired with new life and vigor, the result being that we had a very fine "fair," with quite an increased list of members.

Through the generous contributions of the Dundeeans, it was retained there another year, with like happy results; our list of members, at this time, running up to one hundred and forty-five.

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But from the inconvenience suffered by many in attendance, from the locality, it was determined to again hold our fairs at Penn Yan.

This year we adopted the plan of enclosing the grounds; as one of the greatest embarrassments we had always labored under, was the want of a sufficient fund, this plan, it was thought, would produce the necessary amount of the "needful" as the result satisfactorily proved. We had enclosed nearly four acres of ground, with a substantial fence, inside of which on three sides, were erected pens and stalls for cattle, sheep and swine. On the north side was erected a hall, fifty by seventy feet. neatly enclosed, lighted with sky-lights, tastily trimmed inside with evergreens, giving it a most beautiful and cheerful appearance, in which was exhibited most of our domestic manufactures, fruits, vegetables, flowers, the products of the dairy, needle work, paintings, &c., &c., filled to overflowing, besides two large tents for the exhibition of farm implements, stoves, &c. On the south side of the field was prepared a beautiful track fifty rods in circumference, plowed, graded and rolled down for the exhibition of horses, in the center of which, from a pole about eighty feet in height, waved a star spangled banner, some forty feet in length, which with the field densely crowded with all kinds of stock, agricultural implements, &c., together with about five thousand people, the whole enlivened with the soul-stirring music of a splendid brass band, made it a sight seldom equalled or witnessed on like occasions, in any county of the State.

Never has such signal success attended our efforts as in this instance. Although the weather for several days preceding had been very bad, throwing quite a damper over our prospects, yet, as if smiling on our efforts, on the morning of the first day of the fair the sun shone out in all his accustomed splendor, which seemed to invite the people from all our hills and valleys, as the masses moving towards our village clearly indicated, for never within my remembrance has such a throng visited our town as was present upon this occasion. The weather continuing fine, it was only increased on the second day.

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The following is a brief sketch of the entries. In cattle, which which were all remarkably fine, there was entered about sixty head; and particularly would I notice from the herd of John N. Rose, some Shorthorn cows, which were remarkable animals; also, ten pairs working cattle, exhibited by Messrs. Thomas and Foster, of Potter, all red, of the Devon blood, each pair worthy of a premium; among the rest, we noticed a calf, six months old, weighing over eight hundred pounds; the whole exhibition showing a marked improvement in the breeding of cattle in our county.

The show of horses was not in the aggregate, what we could have wished, although there were many very good ones. The number of entries were, of stallions, five; single horses, eleven; farm horses, three pairs; mares and colts, seventy-two. Conspicuous among the horses, was the renowned "Henry Clay" (the sire of Cassius M. Clay, Kimble Jackson, &c.), besides a number of his colts, together with several of the famous "Morgan" blood. Henry Clay is the property of our worthy president, Nelson Thompson, Esq., whose efforts to improve this noble race of animals in our county, we are happy to say, are being duly appreciated. One or two very fine colts were exhibited, the get of Chas. W. Ingersoll's horse, "General Gifford," remarkable for spirit, form, and action. All showing an increased interest in the breeding of horses among our farmers, than which no other business of the farmer is more interesting and profitable.

As wool growing, and sheep raising, has become one of the greatest sources of revenue to the farmers of the Empire State, and one which is receiving the special attention of many of our most intelligent farmers, believing as they do that the weight of fleece and size of carcass has not yet reached its maximum point. It gives us pleasure to notice the effort some of our farmers are making to aid in producing this result. Our farmers are really waking up to the importance of the subject, as the paying from one to two hundred dollars per head for rams clearly indicates. The show of sheep on our fair ground, both in excellence and numbers, far exceeded all our former fairs. There were some twenty-five competitors, exhibiting in the aggregate, over one

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hundred and fifty head; many of them from the best flocks in Vermont. Among them some as good perhaps as can be found in the State; some of them having taken premiums at the State Fair.

Of swine there was a large number exhibited, embracing several varieties, many of them splendid animals; clearly indicating that our farmers are not relaxing in their efforts to improve our stock of "porkers."

Of fowls there was a great variety, embracing, I believe, all the improved and more fashionable sorts, and (in the language of the committee) of a quality "hard to beat."

The mechanical part of the exhibition was good, but not so full as we could have wished.

Our hall filled, as I before stated, with almost every thing useful as well as ornamental, brilliantly lighted up on the evening of the first day, while a splendid brass band "discoursed sweet music" to as large an audience as could get into it, was a feature in our fair not the least attractive, as the smiling countenances of all bore ample testimony.

The present condition of our society is much better than at any former period since its organization. Our list of members, which was under seventy when first organized, and which never exceeded one hundred and forty-five till this fall, now numbers two hundred and three.

Our receipts from all sources, this year (not including State appropriation),	$647 00
Premiums paid, and incidental expenses, about,	500 00
Leaving in treasury,	$147 00

The address, delivered in the afternoon of the second day, by Byron Spence, Esq., was a beautiful production, well delivered, and listened to by the largest audience ever present on a similar occasion in our county.

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Much of the credit for this fine fair is due to our president, Nelson Thompson, Esq., through whose untiring efforts most of the various arrangements were made.

Officers for 1854.—Nelson Thompson, President; George Wagener, Secretary; Ed. R. Randall, Treasurer; with one Vice-president from each town.

E. R. RANDALL.

GENESEE.*

AGRICULTURAL MEETING.

A regular yearly meeting of the Genesee county Agricultural Society was held January 10th, 1854, at the American Hotel, in the village of Batavia. H. U. Soper, President, in the chair.

In the absence of the secretary, on motion, C. Kirkham, Jr., was appointed secretary, *pro tem.*

Upon balloting for officers for the ensuing year, the following were duly elected:

President—Hon. H. U. Soper, Batavia. Vice-presidents—Eden Foster, Elba; George Shapland, Stafford; Samuel Starr, Jr., Pavilion; Benajah Benedict, Alexander. Secretary—Thomas Yates, Batavia. Treasurer—C. Kirkham, Jr., Batavia. Executive committee—Bradley J. Chapman, Alabama; O. T. Fargo, Alexander; C. E. Orcut, Batavia; C. G. Dewey, Byron; F. D. Kingman, Bergen; C. K. Cone, Bethany; D. J. Lee, Darien; Sherrod Parker, Elba; J. R. Bartlett, Le Roy; Clitus Walcott, Oakfield; R. F. Thompson, Pembroke; C. K. Ward, Pavilion; George Radley, Stafford.

H. U. Soper, presented the following resolutions, which were, on motion, adopted:

Resolved, That premiums be offered for the first, second and third best plowman, open to competitors under eighteen years of age.

* The above report is inserted here, because received too late for other arrangement.

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Resolved, That Eden Foster, of Elba; Chester White via; Cyrus Walker, of Batavia; Nathan S. Godfrey, George Shapland, of Stafford; and Alexander McPher Roy, be the committee to award premiums on plowing.

On motion,

Resolved, That the executive committee meet for spe ness, the first Tuesday in February next, at 10 o'clock ir noon, at the American hotel in this village.

Resolved, That the proceedings of this meeting be pul the county papers, and the Rural New-Yorker.

C. KIRKHAM, Jr., *Secretary p*

BATAVIA, *Jan.* 10, 1854.

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AMERICAN INSTITUTE.

Eleventh Annual Report of the Trustees of the American Institute.

The undersigned present herewith a report of their proceedings in the department of agriculture, for the year 1853, containing statements of their exhibitions of useful farm stock, consisting of native cattle, and of mixed and pure breeds, derived from the best herds of Europe; of horses, sheep, and swine of various breeds, and also an immense variety of poultry. Their exhibitions of horticultural productions, of agricultural implements, new and improved, and their plowing and spading match, are also herein detailed.

The increased number of agricultural and horticultural exhibitions, which are now annually held, embracing central State fairs in many of our States, with county fairs in a large number of the counties of various States, and these constantly augmenting, give assurance that our farming interest, within a few years, has received an impetus, before unknown; and that an unprecedented zeal and desire for accurate scientific knowledge, in regard to culture, is rapidly being diffused throughout the rural districts of our country. That the current of public feeling is shaping to itself such a course, must be gratifying, in a high degree, to the philanthropist. May we not expect that the monotony of the ordinary pursuits of the farmer will experience a change, favorable to the enterprising spirit of our people? That agriculture, the source whence all our temporal wants derive their supplies, will cease to be regarded as a pursuit furnishing but little attraction for enterprise, intellect or genius? That multitudes will find inducement to remain in the enjoyment of pure air, open fields, and invigorating breezes, instead of fleeing to the pent-up closets of our cities? It is much to be desired that such results may follow.

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The improvements annually manifested in the construction and better adaptation of agricultural implements, seem still to occupy largely the attention of our inventors and artisans. From the last, or seventh census returns, we learn that, at the present time, there is in the United States 150,000,000 of dollars invested in implements and machines for aiding and abridging the work of the hands, in cultivating the earth and in preparing its produce for consumption. There is still room for improvement. Agriculture furnishes an immense field for the exercise of man's ingenuity, and there is no rational probability of its sudden diminution. Steam yet remains to be applied to a variety of useful purposes in agriculture; the vast prairies of the West await its potent arm to aid in pouring forth sustenance to millions.

The details of our recent cattle show will be found interesting. It is doubtful whether a greater number of superior animals have been brought together before in the United States. The stock of neat cattle, in any country, and particularly in our own, where the means of rearing would seem to be exhaustless, is of great and constantly growing importance. From them we derive a large proportion of our necessary aliment, as well as materials for the manufacture of many articles of the first necessity; the faithful labor of the patient ox, where shall we find its equivalent? Strike neat cattle from the list of agricultural products, and what should we substitute to fill the void? The entire stock in America comes through importations from Europe. We learn that the first neat cattle were brought by Columbus in 1493. In 1553 neat cattle were first carried to Newfoundland by the Portuguese. In 1611 they were brought from England to Virginia. In 1624 importations were made from England into Massachusetts, and in 1625 from Holland to New-York. It is probable that importations were made at subsequent periods, and at various intervals, down to the commencement of the revolution, as the French had neat cattle in Illinois in 1750. What may properly be understood by the terms "native stock," is undoubtedly the progeny of various importations, down nearly to the commencement of the present century. Among these we had the blood of the best herds in Europe, and had our agriculturists devoted as much attention and care to breeding and improvement, as has been done by our

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transatlantic friends, there is a reasonable probability, that a race equal to the best in Europe, might have been produced. This having been neglected, we now find that the readiest and cheapest means of improvement is by a recourse to importations from abroad. We are gratified to know that the enterprise and liberality of several of our fellow citizens is now closely directed to this object.

The details above alluded to, which will be somewhat voluminous, will be printed with other transactions of the Institute, as required by its charter, relative to commerce, manufactures, and the mechanic arts, and furnished to the State Society, as soon as completed.

ROBT. LOVETT,
ROBT. L. PELL,
D. M. REESE,
ADONIRAM CHANDLER,
E. T. BACKHOUSE.

Trustees.

H. MEIGS, *Recording Secretary.*

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THE WILDERNESS OF NORTHERN NEW-YOR

The limited number of pages which were appropriate
report on the survey of Essex county, in the last volum
Transactions, compelled me to compress my whole matte
space so brief, in proportion to the material I had collec
I fear I did not intelligently describe the numerous subje
investigation.

The physical features of Essex county are so beautifu
versified, and its resources and capacities so varied and i
that they should be minutely described, to be adequatel
ciated.

I was obliged, in that report, to suppress much that I
ious to introduce, and am now enabled, by the courte
executive committee, to supply, in part, these omissi
many other subjects, which I should properly notic
blended with what has been already published, that I can
to them without an inappropriate repetition of much of
ceding report.

I regret that the letter of the act has been so constru
prohibit the publication of the map referred to on pag
the report. It had been prepared with much care, and
tended to delineate the remarkable combination of l
rivers, which spreads over the vast plateau of Northern N
and forming a scenery in the highest degree beautiful
turesque, constitutes the elements of commercial interco
industrial operations, unrivalled in the interior of the S
yet little appreciated.

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These lakes amount in number to some hundreds, and range in size from those covering a few acres, to the dimensions of thirty-five miles in length. They are arranged in different systems. Those forming the head waters of the same stream being grouped together, and all, as I have attempted to explain, susceptible of being united, by artificial means, into one vast and most important inland navigation. The map alluded to, was intended to illustrate this fact.

This region, until within a recent period, had attracted no public attention. The mind can scarcely comprehend the fact, that a territory equal in size to the superficial area of several of the separate States of the Union, lies in the bosom of New-York, touching on one extremity the long occupied and densely populated valley of the Mohawk, and encircled by a highly cultivated and matured country, is still shrouded by its primeval forest, and remains as it came from the hands of its Creator. This territory embraces nearly all Hamilton county, and parts of Herkimer, Oneida, Lewis, St. Lawrence, Franklin, Essex, and Warren, and extends over one hundred miles in length, and about eighty miles in breadth. I desire to call the consideration of the public to this region, not merely because its revelation is intimately connected with the future prosperity and progress of Essex county, but that its development and occupation is of the highest importance to the industrial and financial interests of the State.

Nature reigns in this wilderness, in her primeval seclusion and solitudes. The daring hunter penetrates its mazes in pursuit of its only denizens, the moose, the bear, the panther and deer. The fisherman, whose ardor leads him to the deep recesses of the forest, breaks the quiet repose of these lakes and rivers, but within the boundaries of this sequestered region, man has scarcely an abode, in his civilization and improvements. A portion of this territory is mountainous and impracticable to culture. Here the loftiest group of mountains east of the Mississippi, lift their pinnacles to the skies. The sheer and lofty precipice, the dashing torrent, the sylvan lake and the boundless ocean of forest, combine to form a scenery, which is unrivalled in its magnificence and beauty. The votaries and admirers of nature will soon

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learn to visit these scenes, and will gaze on them with wonder and delight.

The existence of this range of mountains, imposing and magnificent as it is, enveloping in its gigantic folds, the rich and beautiful region beyond, and to the approach of which it seemed to impose an impenetrable bar, has given rise, to the opinions and estimates of that entire territory, which prevail. Eminent men, in supreme ignorance of the character of this district, have sneered at it, as the "Siberia" of New-York, little aware, of the illimitable wealth, which must be revealed, not only in its immense forests, of the most valuable wood and timber, and its boundless mineral riches, but in the adaptation of large sections of it, to agricultural purposes. Other men, impelled by their example, have habitually indulged in sarcasm and ridicule, upon the character and resources of northern New-York. These and similar views, have created impressions relative to the soil, the capabilities and climate of this territory, which have arrested emigration, and induced the board of Land Commissioners of the State, in an unwise and mistaken policy, to sacrifice by inadequate sales a large proportion of the public domain, which had been consecrated by our fathers, to a noble and glorious purpose—the education of our children.

I am anxious to correct those opinions, where I regard them to be false, and to briefly, but with more particularity than the space allowed to my former report permitted, to describe the physical features, the topographical arrangement, the agricultural and industrial capacity of this wilderness district. It is known, that a part of this tract is situated within the limits of Essex county, and that it embraces the loftiest mountains of the Adirondacs. This range, stretching into Hamilton and the southern section of Franklin counties, partially bounds the table land on the south.

Some incidents connected with my personal exploration of Essex county, will afford the readiest illustration of the vastness and utter seclusion of the wilderness, which is spread around these mountains. In my visit to that stupendous phenomenon in the

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works of nature, "the Indian Pass," the contemplation of which is worthy of a pilgrimage from Europe, I was guided by a highly intelligent gentleman, who had the charge of the affairs of the Adirondac company. On leaving the Alpine hamlet of Adirondac, we immediately entered the forest, pursuing a beaten path, which rapidly became less distinct. As we continued constantly but gradually to ascend, and penetrate deeper into the woodland, along a gorge of the mountain, the path became more obscure, and at length, an occasional blazed tree was the only index of our course. We toiled slowly and laboriously along the steep and rugged acclivity of Mt. McMartin, or clambered over the broken and chaotic masses of rocks, which had been hurled from the impending cliffs into the deep ravine, by the convulsions of nature or the slower, but equally effective influence of the elements.

When we reached the center of the pass, and dined beneath its lofty walls from the knapsack of my friend, and drank from a tiny spring, one of the most remote fountains of the majestic Hudson, we had penetrated an unbroken forest between seven and eight miles from the village, and the same distance on the north, separated us from the settlements of North Elba. On the east Mt. McMartin, the massive form of Mt. McIntyre and Mt. Marcy, with a dense wood of about twenty miles, intervened between us and the first cultivated district, while on the south-west and west the pathless wilderness extended almost to the Mohawk and Black river vallies. Much of this vast tract, is occupied by an abrupt, distorted and impenetrable series of mountains and rocks. Amid these wilds the group of mount Seward bounds the table land on the south.

Towards the close of autumn, I entered the forest with a guide, from the side of Wilmington, to visit the great Falls of the Au Sable, where that river bursting through the "Wilmington notch" leaps into the valley, by a precipitous descent of one hundred feet. After examining this solemn and impressive scene, which is situated at the base of the Whiteface mountain, and in a secluded and gloomy gorge, between it and a spur of the Keene mountains, my guide undertook to conduct me, along the slopes of the latter, to a reputed pond of native Copperas water.

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Supposing it to be near an eminence, which was several hundred feet in height above us, we attempted to make the ascent by a circuitous route. We had started upon our excursion soon after daylight. A damp snow had fallen the preceding night, which still rested upon the trees, while a thick mist shrouded the mountains. After having toiled for some time amid the intricacies of the rocks and woods, my guide became perfectly confused and lost, and we wandered for several hours ascending and descending mountains, often clambering up their precipitous sides upon our hands and knees, now wading morasses and fording streams, our clothes saturated with water from the snow, which would fall from the trees upon us, in miniature avalanches.

At length, as night approached my guide avowed his total confusion and inability to direct our route. From the fact, that we had not crossed our track, which was distinctly marked in the soft snow, it was evident our course had been progressive. We were without food, or materials to start a fire, and the only evidence of animated life, we had seen during the day, were the foot prints of the numerous deer, we had aroused from their solitary lairs. I was compelled at last to assume the direction of our progress. Knowing that our designed course was from the Au Sable, I decided to follow up a stream, which I conjectured must flow towards the river. Steadily pursuing this purpose, we ultimately reached a pond, which my guide recognized. Taking a new departure, and after a laborious and protracted march over mountains, through swamps and tangled underwood, we emerged from the forest just at the close of the day.

I record this adventure, as best illustrating the utter seclusion and wildness of this territory. The scene of this incident, is scarcely eighty miles, north and upon the same meridian with the gay and animated halls of Saratoga, and not more than twenty miles from Lake Champlain.

The tract of woodland, where this exposure occurred, extends about five miles, between the settlements in Wilmington and North Elba. It stretches ten or fifteen miles to the east, and

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blends with the western wilderness; there being only an interruption of a narrow belt of improvements, along the banks of the Saranac. The southern or North Elba side of this district, is occupied by a dense forest, of the most valuable wood and timber, upon a level surface of rich and arable land.

The fertile and beautiful plains of North Elba, lie beyond and spread over the space, encircled by a lofty amphitheatre of these mountains. This district, I have sufficiently described in my report, and have attempted to show by an analogy with some sections of Vermont, of about the same altitude, and which constitute a part of the most valuable and productive districts of that State, the great importance and adaptedness of these plains to cultivation. These mountains abound with ores, and are mantled to their summits, by forests of the heaviest timber and choicest varieties of wood. Such is the present condition and aspect of this territory, in the county of Essex, and these are some of their natural resources. Beyond the confines of this county, it reveals another appearance. The broken and rocky range of mountains subsides into a high plateau, with a fertile soil, adapted by its ingredients and formation to tillage and more particularly to grazing.

The plains of North Elba extend to, and unite with this territory, forming an expansion of the plateau, in the bosom of the mountains over an area of about one hundred square miles.

The systems of lakes, which extend over this territory and yield to it so much beauty and animation, and almost mingle their waters, form the sources of the Hudson, of many affluents of the Mohawk and the Black river. Here also, are the fountain heads of the Oswegatchie, the Grass, the Raquette and St. Regis rivers, large and important streams, which discharge into the St. Lawrence, and the Saranac, which flows into Lake Champlain.

The project of forming, in the connection of these streams and lakes by slight artificial constructions, an inland water communication, designed to open to enterprize and emigration the solitudes of this wilderness, I have already demonstrated to be practicable and of the highest importance.

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The Black River canal, skirts this territory on the west. The existing and proposed railroads from Utica and Rome, in a northern direction, traverse its western borders. The Saratoga and Sackets Harbor railroad, now in progress, and which has been fostered by a magnificent bounty of five hundred thousand acres from the State lands, will, it is estimated, penetrate for a distance of one hundred and twenty miles through the heart of an unbroken wilderness. It will thread the mazes of this sequestered tract, along the base of lofty mountains, (towering above it thousands of feet,) through dense forests and amid the loveliest lakes and rivers. The route of this road traverses the south-western section of Essex county, through the rich and important town of Minerva, and approaches within a few miles of the Adirondac works, and will thus render accessible the boundless wealth of that amazing district.

Another railway is in contemplation, from the Champlain and Ogdensburgh road, to connect with one of these southern routes. This project, when accomplished, will open the most secluded and inapproachable sections of this territory.

The most effective and decisive work, however, for the development of the entire region, would be created by the completion of the plan, which many years since, was defeated by the extraordinary reconnoissance referred to in my former report, but which I confidently believe will still be accomplished.

That plan, proposed a railroad, which, passing up the valley of the Au Sable river, should penetrate the barrier of mountains at the Wilmington notch; thence traversing the wide expanse of table land, would bisect the wilderness, connect with the expanded water communication just described, and reach the St. Lawrence at some favorable point, by pursuing the line of one of its tributaries. Lateral avenues, formed by roads, plank roads and railways, and the improvement of the navigation, would render the whole of this rude and unoccupied territory available to all the purposes of industry and agriculture. The impediments in a part of this route, which have been strangely pronounced im-

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practicable, I have the deepest conviction, both from personal inspection and careful inquiry, may readily be surmounted.

The Au Sable river plank road, which has been in operation several years, enters the eastern borders of the forest, and has already created an immense business, and extracted from these fields a vast amount of property. In the vicinity of works which have been established by the effects of this road, flourishing and most productive farms exist, where nature but recently reigned in perfect silence and solitude.

On every side, the slow but constant progress of improvement and cultivation is invading the wilderness. The pioneer of agriculture, is each year occupying the haunts of the hunter, and gradually supplanting him. The valuable town of Greig, in Lewis county, now embracing a population of about fifteen hundred inhabitants, has within a few years, been carved from the silent forest.

When these various avenues have been constructed into this region, the door to eastern emigration will be opened. The question presented to the emigrant's consideration is, what are the attractions which this long neglected and contemned territory present, that should divert him from the exuberant soils of the prairie lands? So vast a tract of country, extending from north to south more than one hundred miles in length and nearly eighty in breadth from east to west, must exhibit a great diversity of soil and climate, as well as in its geographical arrangement. This extent of territory, affords the emigrant a wide range for selection. The following may be enumerated among the inducements which are presented to his consideration:

Northern New-York is near his New England home, and may be reached with inconsiderable expense or exposure. He will not be subjected to the dangers and sufferings incident to acclimation at the west or south, but will find a soil and climate analogous to that from which he has emigrated, and adapted to the same mixed husbandry, of tillage and grazing.

The county of Essex is a counterpart of New England, in its physical aspect, and in the moral and social characteristics of its

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people. More, probably, than any other county in this State, the elements of its population are essentially derived from that origin, and with a less infusion of other blood. The impress of their New England spirit is marked and visible, not merely in their agriculture and arrangement of farms, but in their general intelligence, their eminent fostering of schools, and their high-toned moral and religious character.

This wilderness is distinguished for the healthiness of its climate. There prevails in the atmosphere, which envelopes these mountains, a pureness, an elasticity and vitality that imparts health, and affords an indescribable physical enjoyment in the mechanical process of inspiration; the lungs are filled, and perform their functions without effort or labor. In my explorations of the country, I met with repeated instances of individuals, who had reached their forest homes, in advanced stages of pulmonary affection, in whom the disease had been arrested, and the sufferer restored to comparative health. They uniformly imputed the change to the influence of the atmosphere, and to the soothing and invigorating effect of this peculiar property. No invalid enters these solitudes, without experiencing upon his system, this strengthening and renovating influence. The atmosphere can be impregnated by no noxious miasmas, but is poured down from the summits of these stately mountains, fresh and pure, and life giving as it comes from the labaratory of nature.

Parts of the southern section of this territory, in Warren and Hamilton counties, particularly, where the lofty group of Mt. Seward upheave and dislocate the surface, are high, broken and mountainous. With this exception, and the portions of Essex county already described, the altitude of the country is lower than the plains of North Elba, but it still has an elevation which sensibly affects the climate; far less, however, than has been imputed by an erroneous public opinion. That this severity is not extreme, or such as to repel occupations, may be judged from the fact, that for many years, while the visitors to this region were limited, the hunters and guides were accustomed to procure their supply of potatoes from the spontaneous growth of the vegetable,

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gathered in the earth, and which had sprung from the peelings left upon the surface the preceding year.

Like every new country, in northern latitudes, which is shrouded by a thick and heavy vegetation, this tract is now far more liable to the effects of cold and frost, than it will be, when the advance of improvement has removed the massive forests, and exposed the earth to the influence of heat and light.

The face of this country is represented by those who have thoroughly explored it, to be formed of a series of plains, or high valleys, distinct in their arrangement, and slightly elevated one above the other.

The streams, particularly those which are affluents of the St. Lawrence, flow in a strong, but neither rapid nor violent current, generally between high banks, and through a level and beautiful country. The land bordering upon these streams, is chiefly occupied by dense and stately forests, comprehending the most magnificent and valuable evergreen timber, and the choicest varieties of hard wood.

These forests are not unfrequently interspersed with wide and beautiful wet prairies, or natural meadows, spreading far back and along the margin of the rivers, and presenting in their luxuriant herbage or native grasses, the appearance of highly cultivated fields. Myriads of deer graze and fatten upon these meadows.

These lands, whether sustaining their towering growth of primitive wood, or exhibiting the natural meadows, are represented as possessing native fertility and adaptation to agriculture, seldom surpassed by any districts of equal altitude, and in as high parallel of latitude. Such I know, from personal inspection, to be the character of the lands in North Elba. Specimens of soils, from the alluvial flats, upon the Au Sable river, and the loam from the uplands in that town, which were analyzed by Professor Salisbury, indicate the highest degree of native fertility. In some sections of this territory, a white silecious earth predominates, which is evidence of a light and rather sterile soil; other parts of it are, doubtless, rocky and broken; but a large portion

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of the land, is susceptible of useful cultivation, and much more will be found congenial to grass and grazing.

The general face of this region, may be inferred from the circumstance, that tourists speak in their description of it, of seeing, while floating upon the remote lakes and rivers, the summits of the Adirondacs, towering above the surrounding plateau, at a distance of thirty, and even fifty miles.

The nearness and facility of access to various markets, which must soon exist, is an additional, most important and obvious advantage, which this country will at an early day possess. When the different public improvements, we have glanced at, are accomplished, (and that result is morally certain,) every section of this region will enjoy an easy access to the Mohawk, to the marts of the St. Lawrence and to Champlain.

But the emigrant to this territory, need not place any reliance upon remoter markets, while a thousand forge fires illuminate the recesses of the Adirondacs, the banks of the Saranac, and the valley of the Au Sable, and the innumerable other manufactories exist, which are springing into importance, along the whole confines of this wilderness.

These immense and increasing consumers, will always secure a certain and prompt demand, at the highest prices, for every animal that can be raised upon these hills, and every production of agriculture that the earth can yield. Already, as the pioneer reaches the outline of the wilderness, we see, the manufacturer and the lumberer press on his track, requiring the coal he produces in clearing his land, the timber he falls and every article of consumption he produces, at prices often exceeding those of the Atlantic cities. This domestic market will never be exhausted, but must constantly augment.

Large appropriations have been applied by the State, to the improvement of the navigation of several of the streams, which flow from this region, to facilitate the transportation of logs. Many of them are now navigable for this purpose, from the lakes where they rise, to their mouths. The incalculable amount of

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saw logs, embraced in the wilderness, may by these channels be transported at an insignificant expense, in their direct course to market, to points where they are fabricated into lumber, for exportation.

This wise policy of public munificence, is calling into practical existence and utility an immense aggregate of property, which has been hitherto inaccessible and valueless. While it will administer to the efforts of private enterprize, and supply new fountains of individual wealth, it will return to the treasury of the State, ten fold, the expenditures, by opening the vast public domain to market and by the immense accession to the business of the public works it must create. All the products of this forest will become, in their transportation to market, tributary to the canals. Hence, it is manifest, that the labor of the settler, which removes the forest and reveals the earth to cultivation, also prepares the coal for the manufacturer and the timber for transportation; and thus, while he is remunerated for his toil, he is enabled to pay for his farm and adapt it to tillage. In addition to the pine, spruce and hemlock timber, which occupies this territory and which may be computed by millions of saw logs, it comprehends a vast amount of excellent cedar, and several varieties of oak, birch and cherry, that attain an immense size, and are in great request by the manufacturer, for choice fabrics, and coal wood, that can be estimated by tens of millions of cords.

Iron ore is known to exist here in large deposits, sufficient, probably, for all its requirements; but if this opinion should prove to be incorrect, aside from many other sources of supply, its most remote sections will soon, by means of the contemplated works, join hands with the exhaustless masses of the Adirondac deposits.

Experience has established the fact, that the crude ore may, with much greater ease and economy, be transported for manufacturing to the deposits of charcoal, than the latter can be removed to the ore. In view of all these considerations, may we not indulge the anticipation that this territory will, at no remote day, become a great iron manufacturing district?

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The manufacture has recently been established, in the town of North Elba. A market will thus be opened, for the sale of all this crop, which can be produced in all this region. The soil and climate are peculiarly congenial and favorable to the culture of the potato. I regard this event, as eminently auspicious to the future progress and improvement of this territory.

I observed, in the course of the survey of Essex county, incipient domestic manufactories of articles formed from deer skins, in which the same household either procured their own skins, or purchased them of the hunter, fresh from the chase; tanned and dressed them, and fabricated from the genuine buck skin, mittens, gloves, and other commodities, by their own hands. I think this manufacture will, for many years, be capable of great expansion.

The unrivalled fish, which throng these waters in the utmost profusion, and now afford an article of such exquisite luxury, may be made an important and valuable commodity of exportation, when the means of a rapid and certain transportation are established.

The price of land, in this territory, ranges from one dollar, to six dollars the acre.

The wisdom of the development, by the State of the resources of this region, and the promoting of its settlement by every liberal and fostering policy, is so apparent and imperative, that its expediency can scarcely be enforced by any argument

Let avenues be opened into it; let the navigation be perfected, and the rivers made more available for the floating of saw logs, and it will soon be colonized by sturdy and energetic emigrants, and the silent and gloomy wilderness will resound with the din of labor and industry. A community may be evoked, by a wise and munificent policy, in that desert, equal to the population of other States; new counties may be formed; millions be added to individual wealth, and an incalculable amount be secured to the resources of the State. These, are some of the advantages and inducements which this region offers to the emigrant from New

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England. False and deceptive public sentiment, has shed a blighting influence over it, and created obstacles to its occupation, more impracticable than its mountain barriers, or all the impediments with which nature has surrounded it.

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MINERALOGY.

The opinion advanced in my original report, that undiscovered deposits of iron ore existed in Essex county, of equal value and magnitude to those already known, which would be developed as the exigencies of business demanded, has been already singularly corroborated. Discoveries of new veins and masses are constantly made, which seem to indicate that the whole primary formation rests upon, or is mingled with, masses of iron.

One of the most valuable and remarkable of these deposits, which has been revealed and opened during the current year, is owned by Messrs. Whallon & Judd, and situated near the Little-Pond bed, within half a mile of the village of Pleasant Valley. I visited and examined, with much interest, this important mine which promises, from its eligible position and the superior quality of the ore, to prove among the most important and productive in the county.

The enterprising proprietors are erecting in the vicinity a separating machine, of the largest dimensions, possessing a power capable of performing a vast operation. A peculiarity in a part of this deposit, and unusual in primitive ores, which will probably much enhance its value, is its disintegration in the bed, produced by some process of nature! It is found so perfectly pulverized and reduced, that it may be removed at once from the bed by the shovel, and deposited in the forge fires, with no further preparation. How extensive or available the ore may prove, which is in this condition, cannot of course be determined, without further investigation.

In Moriah, new mines, or those abandoned for years, have been opened, and are now worked to great advantage and profit, while

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others of an old and established reputation, enjoy a foreign demand for their ores, which can scarcely be supplied, by all the energy and efforts of the proprietors. The process of separating the phosphate of lime from some of these ores, has been extensively pursued, with what success I have not been able to ascertain.

The fact of the existence of rich and valuable veins of copper in the county may be regarded as established; although the expediency of working them, under existing circumstances, seems to be questioned. In reference to the mine in Crown Point, an intelligent correspondent writes, "our company expended some $300 last season, in sinking a shaft upon their copper locality, and found more or less all the way, as far as they descended, but no regular lode. Some of the specimens we procured, were very rich and beautiful, and I have no doubt, but a rich lode of copper would be found by sinking deep. The iron business, however, pays too well at present to run much risk on copper."* I adduced several facts, upon which was founded a conviction of the presence of galena, in large quantities, among the mountains which lay upon the borders of Chesterfield and Willsboro'. Other circumstances, which have come to my knowledge since the publication of the report, tend to confirm the opinion I then expressed, and may be deemed worthy of preservation.† Legends, which have been retained in several families, descended from the early settlers of the county, ancestors of which were carried prisoners into Canada during the Revolution, combine to corroborate the following facts. The Indians, who usually were their conductors, were in the habit of uniformly landing near these mountains (which are the last northern spurs of the Adirondacs, and here fall precipitately into the lake), and while a part remained to guard the prisoners, others proceeded into the interior, and after an absence of a few hours, returned to the canoes ladened with lead ore of the richest quality. These traditions are all harmonious as to the incident, the locality, and the time employed by the Indians in procuring the lead.

* Letter of C. F. Hammond, Esq., page 792, Trans. 1852. † Page 787 Trans. 1852.

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Within a few years, strange Indians have been frequently seen prowling in the vicinity of these mountains, with large quantities of crude galena in their possession, which it was incredible, from its weight and appearance, could have been transported by them from any considerable distance. Although always profuse in their assurances of disclosing, at some future period, the position of the vein, the existence of which they freely admit, no allurement or reward has been successful in inducing a betrayal of their secret. These facts may prove of utility in guiding future explorations.

Further investigations have confirmed, to my own mind, the substantial accuracy of the circumstances referred to in my report, relative to the discovery, many years since, of silver ore, among the Adirondac group, in or near North Elba.* The person who professed to have discovered the deposit, was of undoubted respectability. Little question, I am now convinced, exists, as to the fact of his having brought ore from the mountains, at the time he was lost among them, and of its having been fabricated into silver utensils. The circumstances which I have collected, as narrated by this person, are these. He became lost in the extensive and intricate forest which envelope these mountains, and wandered for a day or two in their mazes, totally bewildered and uncertain of his position. That while thus confused, he accidentally discovered the material, and was attracted to it, notwithstanding his situation, by its remarkable appearance. He broke off from the mass, which was large and compact, and embedded in the rock, specimens, that he carried home in his pockets, and from the ore extracted, spoons of pure silver were made. In the confusion and agitation of his mind, he lost all trace of the locality or direction of the deposit, which he was not able afterwards to recover. These facts, from the information I have gathered, appear to be well authenticated.

Within the current year, a very large deposit of remarkably brilliant and pure shale has been discovered in the town of Chesterfield. Specimens of this substance, when subjected to the fire

* Page 788, Trans. 1852.

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of a blacksmith's forge, yield a stringy, pliable substance, and others, when exposed to the same fire, freely ignite.

In the southern section of the same town, near the outlet of a series of ponds, a large and very remarkable deposit of Garnet occurs. It spreads over an area of some acres, and crops out in large and massive rocks, which from their singular formation, and dark red color, are striking and conspicuous features in the landscape. Occasional indications of Colophonite appear in their fractures. An extraordinary mass of the latter, exists about two miles from this locality, and in a geological line. This, I believe, is one of the most beautiful and extensive deposits of Colophonite known to exist.

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FOSSIL REMAINS.

In noticing the subject of the drift formation of Essex county,* I enumerated various evidences of an aqueous influence, and the former presence of water at elevated points on the surface of the earth. Circumstances are constantly developing which tend to establish this theory beyond refutation.

A highly interesting and very conclusive fact, has within a few years been brought to the knowledge of the scientific world, by the eminent naturalist, Professor Thompson, of the University of Vermont. It is so intimately connected with the geological history and arrangement of Essex county, that a reference to it seems peculiarly appropriate to this work.

The position of the fossil exhumed by Professor Thompson, was in the town of Charlotte, in Vermont, and near the eastern shore of Lake Champlain. The identity and harmony of the geological formation of this shore of the lake with the opposite and corresponding one in Essex county, is striking and worthy of consideration.

I called attention in my report to the circumstance, that the extreme termination of Willsboro' Point, which is a peninsula, projecting far into the lake, toward the Vermont shore, is formed of the same slaty rock, filled with fossil remains, that predominates on the Vermont side, and that this rock is almost limited, in Essex county, to that locality.†

It appears from the researches of Professor Thompson that the remarkable exhibition of porphyry in the town of Essex,‡ which has excited so much the attention of the geologist, is strongly de-

* Vol. Trans., 1852, page 795. † ib. 790. ‡ ib. 789.

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veloped in large masses of porphyritic rock, in Charlotte, nearly opposite to Essex, in the same geological range. The lake attains between these points its greatest depth; the bottom has not been found, as I am informed, by a line of six hundred feet.

The following is a summary of the facts connected with the discovery of the fossil remains, as described by Professor Thompson, to which I have referred. His work embraces a full and very clear description of the remains, their position, the arrangement of the bones, and a perfectly satisfactory conclusion as to the species of the animal.* He illustrates his account by minute figures and diagrams of the fossil in its various parts.

The discovery of these remains occurred in 1849, while some laborers were engaged in extending an excavation for the Rutland and Burlington railroad in the town of Charlotte. They struck upon a quantity of bones, embedded in the clay, about eight feet below the natural surface of the ground. Parts of what afterwards proved to be the head, were broken and injured, before the peculiar appearance of the bones attracted the notice of the overseers.

A portion of them were forwarded to Professor Thompson, who immediately repaired to the place to give the subject his personal investigation. The labor and research of several days resulted in the recovery of a large proportion of the skeleton, a few detached parts being only missing. He felt assured from inspection, of the identity of the animal, with the whale family.

He proceeded with the bones and fragments of the fossils to Cambridge, and submitted them to the examination of Professor Agassiz, who confirmed the opinion of Prof. Thompson, that they were the remains of an individual of the species described by Cuvier as the Beluga Leucas, or small Northern White Whale.

By their united labor and science, they were enabled to arrange and collocate the fossil. Having four-fifths of the entire skeleton, from these they were able to determine the size, position, and number of the bones which were not recovered. They estimated the animal to have been fourteen feet in length.

* Appendix to Thompson's History of Vermont, page 20.

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The position of these fossils was about sixty feet above the level of Lake Champlain, and one hundred and fifty higher than tide water.

The remains of a similar animal were discovered, Professor Thompson states, near Montreal, in 1847.

These corroborative facts seem to confirm the opinion that an arm of the sea once flowed over this valley, which perhaps was girted by the Green Mountains on the east, and the Adirondacs on the west; or more probably, the pinnacles of these mountains, which now tower towards the clouds, were at one period islets that dotted the surface of a vast ocean which surged above this continent.

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FISH.

I am gratified in being able to state, that Professor Baird, of the Smithsonian Institution, has been engaged in an incidental, but careful and somewhat minute examination of the ichthyology of Essex county. I hoped to have received a paper on this subject, from him, which I intended to incorporate in this article. The great zeal and enthusiasm with which he pursues these researches, and the distinguished ability which characterises all his efforts, in these interesting fields, will attach much interest and value to the results of his investigation, when they are submitted to the public. He has already ascertained, I am informed, the presence in the waters of the county, of a number of undescribed and unknown species and varieties of fish.

An incident which fell under my observation, may illustrate to other minds, (as it presented new facts to my own,) one or two points in Natural History. In one of those ponds, I mentioned, as inhabited exclusively by the lower order of fish,* we observed a great commotion in the water, a few feet from the land. As we approached, a small animal, which we supposed to be a muskrat, swam from the spot to the shore; and we found there, on our arrival, a large bullhead floundering in the water, and convulsively struggling to escape. It was bleeding from a fresh wound, where the tail had been severed from the body, just behind the dorsal fin.

The fish lay, in a vertical position, its head downwards, and with no ability to guide its own course, or to make any other than

Vol. Trans. 1852, page 748.

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a perpendicular movement. The incident showed the animal to be a fish hunter and ichthyophagous in his habits; and that this fish is guided and governed in its motion solely by the action of its tail.

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WILD BEES.

The hunting of wild bees has been, in parts of Es a pursuit of considerable importance, and as excitin sing, as it often is profitable. It is still continued t extent. The wild bee, although similar in appearance to the domestic bee, is undoubtedly a native of the fores genous to the country. It appears to be adverse to tl of man, and recedes into the deeper wilderness, as cult proaches its secluded and hidden haunts. The hives bee are found far in the solitudes of unoccupied tract from the habitations of men, and occupying the most s retreats. It selects, for the location of its hive, an el sition, far up some retired and shady ravine, in the mi or mountains, and in the vicinity of a body of wate country is flat, the bees establish their domicile upon t of a lake or stream, in as much seclusion as possible. Tl priate usually, for this purpose, the hollow of a tree, selecting one of great magnitude; but occasionally they their hives in the crevices of rocks. They enter the the tree by a small orifice, which very essentially prot from observation and discovery.

Here they remain for years, in possession of the sa models of laborious and untiring industry, accumulating their luscious treasures, and annually casting off new These retreats are found with difficulty, and by the much skill by the hunter, and when found, are often cult of access. They are exposed, not only to the merc ges of man, but insects and animals, particularly the mit great depredations upon them.

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The professional bee hunter, when engaged in this pursuit, provides himself with a quantity of honey comb, strained honey, and a small light box, about six or eight inches long, and four inches deep and four wide. This box has two slides, one at the top, and the other in the center. The slides move in grooves. In the upper lid he arranges a piece of glass; the lower compartment contains comb filled with honey. Thus equipped, the hunter proceeds, late in autumn, to a district, which by previous observation, he has ascertained is frequented by the bees, in pursuing their labors.

Two modes are adopted by the hunter, to procure the bees, which he uses to discover the position of the hive. By the first, and this is the most common, when he detects a bee upon a flower, which is generally a wild plant, known to the hunter as the Frost blow, that blooms late in October, he places the box beneath the insect with the upper lid drawn, and by a quick and dexterous movement thrusts it into the first compartment, and the lid being closed the bee is seen through the glass. The lower lid is then drawn and the glass darkened, when the bee immediately settles upon the honey and commences its feast.

It is now left undisturbed, with both lids open. After having supplied itself, the bee leaves the box, and, rising above it, seems to take a particular note of its locality, flying around in circles, which grow wider at every gyration; the bee constantly ascending, until at length it takes an air line for its hive. This crisis tests the skill and vigilance of the hunter. The course of the bee is carefully watched and the distance of the hive is computed by the length of its absence. The hunter estimates this by allowing three miles to the minute, for its flight and return. The bee is allowed to make the journey several times, when it is again secured and the hunter proceeds in the direction of the hive, as indicated by the course of the bee's flight. It seems to communicate its discovery to the hive; as frequently on its return it is accompanied by others. The hunter often finds it necessary to catch and mark an individual bee, so as to identify it in his operations.

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After advancing as far as he deems it expedient, the hunter opens the box, a second time, and allows the bee to escape. It repeats the same reconnoisance as before, and then takes its line for the hive. If this, as often occurs, has been passed, the fact is indicated, by the bee returning on the hunter's track. It frequently becomes necessary, when the position of the hive has been disguised, with more than usual adroitness and success, for the hunter to make several lines, in this manner, when he determines the locality of the hive, by ascertaining the point, where the different lines intercept. A number of bees from the hive, are often in the box together, and occasionally those from different hives, as appears from their making distinct lines, on rising from the box.

The other mode pursued by the hunter is this. Upon a cleared spot in an elevated situation, he builds a fire and heats some flat stones; on these, some of the comb is burned; the odor of the burning comb will attract the bee; fresh comb, containing honey, is then placed on the stone, upon which the bee is allowed to feed. When it leaves, the comb is removed from the stone and the box substituted in the same place; the bee, on its return, lights upon the honey in the box and is thus secured; afterwards the hunter proceeds by the same process as before.

The tree, which contains the hive, is then felled and the whole family of bees are exterminated, usually by burning straw. This ruthless work, the hunter considers necessary, as well to protect himself from their assaults, while securing the honey, as to prevent his being thrown on a false line, by wandering bees from the same hive, who would bring him back to the already ravaged tree. This often happens.

Bee hunting, my informant* remarks, in closing, "is a most exciting sport, and when pursued by a skilful hunter, is also very profitable. I have known of over a ton of honey, having been procured in a single month by three persons, myself being one of the number, besides more than four hundred pounds of wax. This honey was sold in Boston for fifteen dollars the hundred weight, and the wax for twenty cents the pound."

* Mr. James M. Weston, Chesterfield.

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"We disccovered in this excursion fifty-seven hives, which yielded from thirty-five to one hundred and fifty pounds of honey each, depending on their age and size."

In the south-western section of the town of Chesterfield, and amidst a rude and mountainous tract of country, I am informed, an immense colony of bees existed, consisting of nnmerous hives. Their abodes were in the crevices and fissures of the rocks and inaccessible. The whole atmosphere in the vicinity, it is represented, was filled with the bees. Various attempts by excavation and blasting have been made, to reach the deposits of honey, but without success. Owing to these annoyances and other disturbances, the bees became so exasperated and ferocious, and they were so formidable from the infinitude of their number, that it was hazardous to approach their retreat. It is supposed, that this remarkable and most interesting colony, has been destroyed by the conflagrations, which in recent years have swept over that district.

A singular fact in the nature and habit of the bee is remarked by hunters. While they permit some persons to approach their habitations with perfect impunity, they evince towards others the most determined and inveterate instinctive hostility.

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AGRICULTURE.

A new spring wheat was introduced into the northern sections of Essex county, in the year 1851, by Mr. Joshua Hoag of Chesterfield, which promises the most favorable and important results, and to give a new impulse to the culture of that grain. Mr. Hoag received it from Hoosick, Rensselaer Co. It is rapidly superceding even the Black seed wheat in the partiality of the farmer. It is known as the White bearded wheat. The berry is large, full and bright. The grain commands at our mills nearly the same price as winter wheat, and the flour it produces is scarcely distinguishable from the choicest Genesee. It remarkably resists the ravages of the insect and diseases which so generally affect this grain. The last season, which was distinguished for its unexampled and destructive drougth, I cultivated this and the black sea wheat in the same field and upon contiguous ground; the yield of both was light, but the product of the Bearded far exceeded that of the Black sea, and while the latter was so affected by the rust as to render the binding into sheafs impracticable, the former was uninjured, standing erect with the straw bright and untainted. Another peculiarity of this grain, is the remarkable facility with which it is thrashed. This circumstance, renders it liable to be shelled by the agitation of the wind, unless harvested before full maturity. The average yield of this wheat is about thirty bushels in ordinary seasons.

The prevalence of the rust in both oats and wheat, during the late excessively dry and hot season, is regarded by our farmers as a novel and remarkable occurrence.

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NATURAL CURIOSITIES.

In the descriptions of the natural curiosities of I embraced in the report, I omitted to notice two very impressive subterranean passages, in the town of S Paradox lake. The first of these, forms the chann rivulet, by a natural perforation of some hundred the massive rock, ten or fifteen feet below the surface passes the public road, as if by an artificial bridge.

The other, which I find referred to in early worl pography of this region, is a highly curious and rema bition. The explorer enters a lofty arch, several fe surface, carved out of the solid rock. It presents, at the appearance of nearly an exact gothic structure, a broken and ragged sides and canopy. This dark cavern extends a number of rods, and is from four tc in width, and ten to fifteen in height. It constitute way of a large stream, which propels a mill just a trance, and foams and dashes through the rocky and descent.

Trout are often found in pools, within this pas are formed by the obstructions to the stream in Few scenes in the county exhibit a more remarkable aspect.

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HISTORY.

I was compelled, from the want of space, to withhold in the former report, some historical incidents of interest, in connection with the battle in the strait of Valcour, between Carlton and Arnold, which is indirectly associated with the annals of Essex county.

A solitary house, and probably the only one in that region, stood, in the year 1776, upon the mainland, directly opposite the little cove in Valcour island, in which Arnold's fleet was moored. This house was occupied by a family of the name of Hay, who were in communication with Arnold. It had been arranged between them, that, if the inmates discovered the approach of the British fleet, they should announce it to Arnold, by displaying a sheet at a particular window.

The advance of Carlton was perceived, and the signal given in conformity with the arrangement; but for some reason, Arnold could not, or did not take advantage of the information to escape, as they supposed he intended.

A daughter of Mr. Hay, the venerable Mrs. Elmore, still survives, and resides near the spot, who, at that time, was an infant in her mother's arms, and from whom I received many interesting particulars of that battle, and the early settlement of the country.

The ruins of the cellar, yet indicate the position of the house, and the scene of the conflict. While it raged, Mrs. Hay, carrying her child, went to a spring near the lake shore, which was then shrouded by a dense wood. To her great amazement and terror, she found herself in the midst of a large body of Indians, decorated with their war paint and dresses, and armed with guns

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and tomahawks. They were placed there in ambush, prepared to receive the American crews, if they attempted to escape by landing. The mother, agitated and alarmed, clasping the child to her breast, began to weep; when an aged chief came to her side, and unable to communicate consolation or an assurance of protection in words, manifested his kind and protecting feelings, by gently and soothingly wiping her eyes with the flap of his shirt.

The Hay family, subsequently for a period, sought a refuge and safety in Canada. Mrs. Elmore is the mother-in-law of the grandson of William Gilliland, the pioneer of Essex county.

The remains of one of Arnold's flotilla, which was sunk during the conflict in '76, are still visible at low water, when the lake is serene and unruffled. Cannon balls and other munitions, have been recovered from this wreck. It lies adjacent to the cove and near a rocky islet, which, from the circumstance, is called "Ship island."

A small island lying directly off the southern extremity of the Isle of Valcour, and near the boundary of Essex county, attracts observation by its peculiar formation and beautiful appearance. It rises from the lake in a sheer and rocky precipice, ten or fifteen feet in height, presenting an impenetrable wall, except at one narrow point, which affords the only landing place. The soil is singularly fertile, and has evidently received high cultivation.

The tradition in the country represents this island to have been occupied originally by the officers of the French marine, upon the lake, and subsequently by those of England, as a flower and ornamental garden. This legend, the lovely aspect and secluded position of the island, its peculiar form and difficult accessibility, have combined to shed about it an air of romance and interest. A rich and beautiful lawn still mantles it, upon which may be traced the outlines of artificial beds and walks, that seem to corroborate this tradition. Its history has attached to it the name of "Garden island."

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APPENDIX.

The following tables, derived from the census of 1
priately belong to the appendix of the original report,
not be procured in season to be published with that vo

Births, marriages, deaths, dwellings, and families, in E
by the census of 1850.

Population,	
Births in the year ending June 1st, 1850,	
Marriages, same year,	
Deaths, same year,	
Number of dwellings,	
Number of families,	

Colleges, academies, and schools.

Number of public schools,	
Teachers " "	
Pupils " "	
Taxation,	$10,34
Public funds,	4,01
Other sources,	3,25
Total annual income,	$17,60

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Academies and other schools:

Number,	17
Teachers,	18
Pupils,	512
Annual income, without any endowment or public fund,	$1,219

Attending school during the year, as returned by families:

Males,	3,379
Females,	3,502
Free colored,	2
Total,	6,883
Native,	6,473
Foreign,	410
Total,	6,883

Adults who cannot read or write.

Whites—Males,	612
Females,	533
Total,	1,145
Free colored—Males,	3
Females,	1
Total,	4
Native,	785
Foreign,	238
Aggregate,	1,023

Agriculture, farms and implements, stock, produce, home manufactures, &c.

Acres of land in farms—Improved,	166,951
Unimproved,	136,610
Cash value of farms,	$3,393,385

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Value of farming implements and machinery, ...
Horses, ...
Asses and mules, ...
Milch cows, ...
Working oxen, ...
Other cattle, ...
Sheep, ...
Swine, ...
Value of live stock, ...
Value of animals slaughtered, ...
Wheat, bushels, ...
Rye, " ....
Indian corn, bushels, ...
Oats, bushels, ...
Wool, pounds, ...
Peas and beans, bushels, ...
Irish potatoes, " ....
Barley, " ....
Buckwheat, " ....
Value of orchard products, ...
Value of produce of market gardens, ...
Butter, pounds, ...
Cheese, " ....
Hay, tons, ...
Clover seed, bushels, ...
Other grass seed, bushels, ...
Flax, pounds, ...
Flax seed, bushels, ...
Maple-sugar, pounds, ...
Molasses, gallons, ...
Beeswax and honey, pounds, ...
Value of home made manufactures, ...

Libraries other than private.

One public library, having 600 volumes; 159 schoo having 14,413 volumes.

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Churches, church property, &c.

	No. churches.	Aggregate. accommodations.	Total value of church property
Baptist,	10	3,950	$19,700
Congregational,	13	5,200	29,100
Methodist,	13	3,900	26,200
Presbyterian,	2	800	3,000
Roman Catholic,	3	1,050	6,900
Union,	1	250	1,200
Universalist,	1	150	500
Total,	43	15,300	$86,600

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NEW-YORK STATE AGRICULTURAL SOCIETY.

AWARD OF PREMIUMS, 1853.

CLASS I.—CATTLE.

No. 1. Short horns.

Best bull, 3 years old and upwards, L. G. Morris & N. J. Becar, on their bull "Romeo,"..... $25
2d best, Amos F. Wood, Ellisburgh, Jefferson, on his bull "Robinhood,"..... 15
3d best, David Calkins, China, Wyoming, on his bull "Grand Duke,"..... 5
Best bull, 2 years old, L. G. Morris & N. J. Becar, on their bull "Marquis of Carrabas,"..... 20
2d best, E. G. Alden, Sullivan, Madison, on his bull "Favorite,"..... 10
3d best, Joseph Haswell, Hoosick, Rensselaer, on his bull "North Star,"..... 5
Best bull, 1 year old, Lewis G. Morris, Mount Fordham, Westchester, on his bull "Tommy Bates,"..... 15
Best bull calf, W. M. Bullock, Bethlehem, on "Barry",..... 5
Best cow, 3 years old and upwards, Noel J. Becar, New-York, "Oxford 13th,"..... 25
2d best, L. G. Morris, Mount Fordham, "Bloom,"..... 15
3d best, L. G. Morris & N. J. Becar, "Songstress,"..... 5
Best heifer, 2 years old, Noel J. Becar, New-York, "Lady "Booth,"..... 20
2d best, L. G. Morris, Mount Fordham, "Kate Hayes,"..... 10
Best heifer, 1 year old, L. G. Morris & N. J. Becar, "Beauty" 15
2d best, Noel J. Becar, New-York, "Maid of Oxford,"..... 10

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3d best, Noel J. Becar, New-York, "Lady Elgin,"..... $5
Best heifer calf, L. G. Morris, Mount Fordham, "Superior 2d," 5

Having come to the above decision, *unanimously*, after a laborious examination of the competing animals, your committee feel it their duty to recommend for special notice the imported bull "*Balco*," belonging to Messrs. Morris & Becar, an animal destined to prove a valuable addition to the *Short Horns* of the United States, and place that valuable breed upon an equal footing with any which the world can produce. Your committee, in offering these remarks, have no intention of derogating from the merit of several other bulls, brought under their notice, which were of a very high stamp, and confer much honor upon their respective breeders and owners.

ADAM FERGUSSON, *Chairman*,
I. S. HITCHCOCK,
GEORGE J. PUMPELLY.

No. 2. DEVONS.

Best bull, 3 years old and upwards, Remington and Bowen, Sennett, Cayuga, "Prince,"..... $25
2d best, J. H. Casswell, Exeter, Otsego, "Osceola,".1..... 15
3d best, D. C. Howe, Brutus, Cayuga, "Criterion,"..... 5
Best bull, 2 years old, L. G. Morris, Mount Fordham, "Frank Quartley,"..... 20
2d best, W. P. & C. S. Wainwright, Rhinebeck, "Uncas,".. 10
3d best, J. B. Tuckerman, Richfield, Otsego, "Young Major,"..... 5
Best bull, 1 year old, George Vail, Troy, "May Boy,"..... 15
2d best, L. H. Colby, Scipio, Cayuga, "Valiant,"..... 10
3d best, Peleg Weeden, Preston Hollow, Albany co.,..... 5
Best bull calf, W. P. & C. S. Wainwright, Rhinebeck, "Dacotah,"..... 5
2d best, L. G. Morris, Mount Fordham, "Coke," Trans. and 3
Best cow, 3 years old and upwards, Lewis G. Morris, Mount Fordham, "Birthday,"..... 25
2d best, Edward G. Faile, West Farms, "Adah,"..... 15
3d best, Lewis G. Morris, Mount Fordham, "Virtue,"..... 5

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Best heifer, 2 years old, W. P. & C. S. Wainwright, Rhinebeck, "Kate Kearney,". $20
2d best, W. P. &. C. S. Wainwright, Rhinebeck, "Hellena," 10
3d best, Remington & Bowen, Sennett, "Pocahontas,"..... 5
Best heifer, 1 year old, W. P. & C. S. Wainwright, Rhinebeck, "Nora,"..... 15
2d best, Edward G. Faile, West Farms, "Amy,"..... 10
3d best, L. G. Morris, Mount Fordham, "Helen,"..... 5
Best heifer calf, L. G. Morris, Mt. Fordham, "Birthday 2d," 5
2d best, L. H. Colby, Scipio, Transactions and..... 3

In the class of aged bulls, one of the bulls first reported by the committee was not furnished with any evidence of descent from thorough blooded stock, and was excluded and the report referred back to committee for correction, and the report corrected. Vide report ante, page 86.

Devon Cows.—The committee on Devon Cows and heifers beg leave to report:

In justice to the exhibitors, your committee would say, that most of the animals presented were very fine, and in some of the classes, after a careful examination, it was difficult to determine, which was entitled to the first prize; most of the animals presented in this class were very superior; too much can not be said in their praise. Your committee feel, that any thing they could say, in recommending this class of cattle, would be useless, as they recommend themselves better than we can do it on paper. It is the unanimous opinion of the committee, that the Devons are, in comparison with other breeds, gaining on the public estimation; and that those who have brought for inspection animals of this class, of late importations, procured at great expense and risk, have shown a good taste, correct judgment, and should be considered as public benefactors.

W. R. SANFORD,
JOHN T. ANDREW,
S. H. CHURCH, *Committee.*

No. 3. Herefords.

Best bull, 3 years old and upwards, E. Corning, jr., Albany, "Cardinal Wiseman,"..... $25

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Best bull, 1 year old, E. Corning, jr., Albany, "Berwick,".. $15
2d best, Remington & Bowen, Sennett, "Defiance,"..... 10
Best bull calf, E. Corning, jr., Albany, "B. P. Johnson,"... 5
2d best, Remington & Bowen, Sennett, "Warrior,". Trans. and 3
Best cow, 3 years old and upwards, E. Corning, jr., Albany, "Victoria 3d,"..... 25
Best heifer, 2 years old, Remington & Bowen, Sennett, "Woodbine,"..... 20
2d best, E. Corning, jr., Albany, "Grace,"..... 10
3d best, E. Corning, jr., Albany, "Beauty,"..... 5
Best heifer, 1 year old, E. Corning, jr., Albany, "Perfection," 15
Best heifer calf, E. Corning, jr., Albany, "Matchless,"..... 5

No. 4. AYRSHIRES.

Best bull, 3 years old and upwards, E. P. Prentice, Mount Hope, Albany, "Dundee 2d,"..... 25
2d best, Samuel A. Curtiss, Canaan, Columbia co.,..... 15
Best bull, 2 years old, Hungerford & Brodie, Adams, Jefferson, "Canby,"..... 20
Best bull, 1 year old, E. P. Prentice, Mount Hope, Albany, "Dundee 4th,"..... 15
Best bull calf, E. P. Prentice, Mount Hope, "Dundee 5th," 5
Best cow, 3 years old and upwards, E. P. Prentice, Mount Hope, Albany, "Libby,"..... 25
Best heifer, 2 years old, E. P. Prentice, Mount Hope, Albany, "Daisy,"..... 20
2d best, E. P. Prentice, Mount Hope, Albany, "Jenny Dean,"..... 10
Best heifer, 1 year old, Hungerford & Brodie, Adams, Jefferson, "White Lily,"..... 15
Best heifer calf. E. P. Prentice, Mount Hope, Albany, "Minnie 3d,"..... 5
2d best, E. P. Prentice, Mount Hope, "Alice 5th," Trans. and 3

No. 5. GRADE CATTLE.

Best cow, 3 years old and upward, Obadiah Howland, Owasco, Cayuga, "Red Rose,"..... 25
2d best, Seth Whalen, West Milton, Saratoga,..... 15
3d best, Wm. Wilson, Milton, Sararoga,..... 5

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Best heifer, 2 years old, George Sheldon, Sennett, Cayuga,... $20
2d best, Obadiah Howland, Owasco, Cayuga, ... 10
3d best, Seth Whalen, West Milton, Saratoga, ... 5
Best heifer, 1 year old, J. Beekman Finlay, Saratoga Springs, 15
2d best, George Sheldon, Sennett, Cayuga, ... 10
Best heifer calf, J. W. Hamlin, Buffalo,..... 5
2d best, Wm. Wilson, Milton, Saratogo,..... Trans. and 3

No. 6. Natives.

The committee on Native cattle regret that they have to report that the liberal premiums offered by this Society have failed to bring out animals, in this class, of any age, worthy or *worth* the amounts offered. We decline making awards.

JOHN R. PAIGE,
NATHAN J. BROWN,
JOHN A. WAKEMAN.

No. 7. Working Oxen.

Best team from any town, not less than ten yoke, E. & H. Sheldon, Sennett, Cayuga, ... $25
2d best, Seneca Daniels, Milton, Saratoga, ... 20
Best yoke of oxen, Adam A. Hoysradt, Kinderhook,..... 20
2dbest, Luther Comstock, Kirkland, Oneida,..... 15
3d best, George Sheldon, Sennett, Cayuga,..... 5
Discretionary premium for single yoke, E. & H. Sheldon, Sennett,..... Dip.

No. 8. Steers—*Three years old.*

Best single yoke, George Sheldon, Sennett, Cayuga,..... $10
2d best, Herman O'Hara, Owasco Lake, Cayuga, ... 8
3d best, Amos F. Wood, Jefferson county,..... Trans. and 3

No. 9. Steers—*Two years old.*

Best single yoke, Amos F. Wood, Ellisburg, Jefferson, ... $10
2d best, Richard Shaver, Blenheim, twin steers,..... 8
3d best, Herman O'Hara, Owasco Lake,..... Trans. and 3

No. 10. Steers—*One year old.*

Best single yoke, Amos F. Wood, Ellisburg, Jefferson, ... $8
2d best, John Garrison, Stillwater, Saratoga,..... 5
To boys under 16, training yoke of steers, best, John Skillman, Stillwater,.....S. Medal.

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2d best, Samuel N. Fish, Canton, St. Lawrence, ... Trans. and $2

No. 11. MILCH COWS.

Milch cows—none offered.

No. 12. FAT CATTLE—*On hay and grass after one year old.*

2d best ox, 4 years and upwards, Hiram Sheldon, Sennett, Cayuga, ... $6

3d best cow, 4 years and upwards, Obadiah Howland, Owasco, Cayuga, ... 4

A lot of 28 fat steers and heifers, exhibited by J. W. Taylor, Lima, Livingston county, attracted much attention, and the Executive committee awarded a special premium of $30.

No. 13. FOREIGN CATTLE.

Discretionary premium to James Duell, West Stockbridge, Mass., for his bull, ... $5

CLASS II.—HORSES.

No. 14. HORSES FOR ALL WORK.

Best stallion, 4 years and upwards, Wm. Trip, Half Moon, "Revenge," $25

2d best, John Quimby, Ballston, "Sir Charles," 15

3d best, James Bygart, Kingsbury, "Rattler," 5

4th best, Lemuel North, Champion, "Sherman Black Hawk," Youatt.

Best brood mare (with foal at her foot,) 4 years and upwards, Joseph Daniels, Greenfield, Saratoga, ... $25

2d do., John W. White, Greenwich, Washington, ... 15

3d do., Henry Lincoln, Greenfield, Saratoga, ... 5

4th do., Stephen L. Burton, Bolton, Warren, ... Youatt.

The committee to whom was assigned the duty of awarding premiums on class 2, No. 14, Stallions of all work, would respectfully report as follows: That the number of entries made were thirty-two, and about thirty of that number exhibited, varying from the fine horse of less than fifteen to those of seventeen and a half hands in height; and your committee would say, that for the number, they were considered a class of very superior horses.

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Your committee were of the opinion that some of those exhibited were superior for the plow or heavy draft, while others, which in that capacity would be inferior, for other important purposes would be far superior. And after giving them all the attention which time and circumstances would admit of, awarded the premiums as above.

Your committee regretted that some horses which stood high in their estimation previous, were not presented at the last examination; but such being the case, they were deprived of comparing them more closely with those which received the awards.

If it is required that your committee report the horse which they conceived next in merit to those receiving the premiums, they would name the horse "Hamiltonian," as being a fine four years old horse, near sixteen hands, clean head and neck, muscles well developed, and limbs remarkably good.

In relation to those previously named as premium horses, we would remark, that the horse "Revenge" is of a dark bay color, neck and head well set up, rising well on the wethers, with shoulders well thrown back, muscles of the back prominent, loin and hip good, exhibiting much symmetry of form and gracefulness of action.

The "Sir Charles" is of a fine bay color, possessing a deep expansive chest, head and ear good, shoulders well set back, but rather thick, neck well set on, flank remarkably deep, and a horse indicative of much strength and constitution.

The horse "Rattler" is also of a fine bay color, not as compact in form as the preceding, shoulders and hips very good, limbs strong, sinewy, with action, easy and commanding.

The horse "Sherman Black Hawk" is of jet black, size good for that family of horses, and well developed in all his points. There are others which your committee would like to mention, but time and space forbid.

The horse being an animal so essential to the happiness, convenience and the glory of the human race, that it is by no means

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singular that he should, from the earliest period of the world, have been the favorite of man. And at no time has the Horse of All Work been more sought for, or paid the breeder better for the cost and trouble of raising, than at the present, and he is conceded to be the horse most generally in demand. He is the horse of the farmer, the mechanic and the professional man, and very frequently he is the kind sought for by the man of luxury and indulgence.

Now what can be done to breed that kind of horse? We will, for a few moments, crave your indulgence, not that we design to lay down definite rules for breeding, but that persons who have good mares to breed from, do not adhere enough to *system*, or are not particular enough in accomplishing their object, we think will not admit of a doubt. It is now a generally conceded fact, that "like produces like," and that the progeny will inherit the general or mingled qualities of the parents. There is scarcely a disease or peculiarity by which either of the parents are affected, that the foal does not inherit, or occasionally show a disposition to it.

In the first place, persons who have mares which have some deficiency of points or action, are not particular enough that the horse which they use, does not possess the same objections. This your committee think is apt to be a very much neglected consideration with breeders; and too often the result is, that the good points of both dam and sire are almost lost, the defects increased, and the offspring is inferior to both parents. Now, in order to obviate the defects in one parent, the other should have those points superior, to improve such objections.

Should any of the preceding remarks call the attention of breeders of this class of horses, more particularly to the system of breeding, your committee will feel amply repaid for their labor.

All of which is respectfully submitted.

HENRY RHODES, *Chairman*,
BURR GILBERT,
JOHN P. CLINE,
Committee.

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No. 15. DRAUGHT.

Best stallion, 4 years and upwards, J. D. Spinner, Herkimer, "Sir Henry Eclipse,"..... $25
2d do., R. Mosher, Saratoga Springs, "Genesee Gray,"..... 15

No. 16. THOROUGH BRED.

Best brood mare (with foal at her foot) 4 years and upwards, J. B. Finlay, Saratoga Springs,..... 25

The committee recommend a premium to a horse "Waxy Pope," owned by C. C. Lansing of Watervliet,—Silver Cup.

Mr. John A. King, Mr. L. H. Yates, and Mr. C. N. Bement, the committee on thorough bred horses, beg leave to report: That the show of thorough bred horses and mares was neither numerous nor fine. There were but six entries of horses and mares claiming to be thorough bred; and after a careful examination of horses and pedigrees, the committee were able to award but one premium of $25, to the thorough bred bay brood mare, 7 years old, out of "Gipsey," by imported "Mercer;" "Gipsey," sired by "Eclipse," with foal at her side, by imported "Trustee." They would have awarded a premium to the bay horse "Waxy Pope," 4 years old, because he was a horse of many good points, and showing much blood; but his pedigree not being, in the opinion of the committee, as full and perfect as the rules under which they acted required, they were obliged to withhold a premium from him; but have thought proper to recommend him to such premium as the Society may think proper to award to him, under the circumstances. The stallion *Alexander* was shown for exhibition; he is a fine animal, and having already received several premiums, can now only have our additional testimony to his proved excellence. Several entries were made which were ruled out, as not agreeing with the rules which governed the committee, who did not feel themselves at liberty to relax in the smallest degree the rules under which they acted, or the principles which enter into the judgment of what constitutes a thorough bred horse.

JOHN A. KING, *Chairman*,
And in behalf of committee.

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No. 17. THREE YEARS OLD STALLIONS AND MARES.

Best stallion, 3 years old, Eaton & Chrysler, Greenfield,.... $20
2d best, John H. Boyd, Whitehall, Washington, ... 10
3d best, Amasa Barton, Kingsbury, Washington, ... 3
4th best, Reuben Mosher, Saratoga,..... Youatt.
Best mare, 3 years old, John W. White, Greenwich, Washington,..... $20
2d best, H. B. Farr, Fort Ann, Washington,..... 10
3d best, George W. Coats, Ticonderoga, Essex,..... 3
4th best, John Mastin, Greenfield, Saratoga, ... Youatt.

Discretionary.

Michael Leyden, jr., Collamer, Onondaga Co., superior gelding, 3 years old,..... $15

No. 18. TWO YEARS OLD STALLIONS AND MARES.

Best stallion, 2 years old, J. N. Herdman, Cherry Valley, Otsego, ... $15
2d best, H. B. Howard, West Port, Essex,..... 10
3d best, D. C. Taylor, Wadham Mills, Essex, ... Youatt.

Discretionary Premiums.

On 2 year old colts and saddle mare, omitted to be examined by regular committee:

G. G. Reynolds, Norway, black colt,..... Diploma.
William M. Rysdyk, Orange county,..... S. S. Medal.
J. Beekman Finlay, Saratoga Springs, bay filley,..... Youatt.
Miss Aletta Beekman Finlay, Saratoga Springs, for white saddle mare "Kate,"..... Silver Cup.

No. 19. ONE YEAR OLD COLTS.

Best stallion, 1 year old, Wm. Coleman, Kingsbury, Washington $10
2d best, G. W. Herrick, Wilton, Saratoga,..... 5
3d best, Alva M. Hart, Stillwater, Saratoga,..... Youatt.
Best mare, J. B. Burnett, Syracuse, "By Consternation,".... $10
2d best, P. S. Baldwin, Essex, Erie, ... 5

No. 20. MATCHED HORSES.

Best pair of matched horses, Josiah Barber, Auburn, on his "bay horses,"..... $15
2d best, A. Patten, North Troy, "bay horses,"..... 10

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3d best, George Lasher, Bethlehem, Albany, "bay horses,". $5
4th best, Erastus D. Pierson, Macedon, Wayne, "dark bays," ..... Youatt.

No. 21. MATCHED HORSES—*for draught or farm.*

Best pair, G. B. Powell, Milton, Saratoga,..... $15
2d best, Reuben Barber, Stillwater, Saratoga,..... 10
3d best, E. F. Seymour, Westmoreland, Oneida,..... 5
4th best, N. H. Bennet, Saratoga,.....Youatt.

No. 22. GELDINGS.

Best gelding, I. M. Smith, Mechanicville,..... $10
2d best, Silas M. Burroughs, Medina,..... 8
3d best, John B. Burnett, Syracuse, ... 6
4th best, George B. Moore, Fort Ann,.....Youatt.
A horse owned by Isaac T. Grant, Schaghticoke, highly commended, ...Youatt.

No. 23. SINGLE MARES.

Best mare, L. R. Proctor, Hartwick, Otsego,..... $10
2d best, T. B. Derrick, Troy,..... 8
3d best, C. & W. W. Rockwell, Hadley, ... 6
4th best, R. W. Higbee, Glens Falls, Washington, ...Youatt.

No. 24. FOREIGN HORSES.

Best blood stallion, 4 years and upwards, D. E. Hill, Bridport, Vt., "Black Hawk Chief,".....Dip. and $15
2d best, R. M. Adams, Burlington, Vt.,..... 10
Best stallion, horse of all work, 4 years and upwards, F. M. Wilcox, Shoreham, Vt., "Hamiltonian Black Hawk," Dip. and 15
Best draught stallion, 4 years and upwards, William M. Olcott, Albion, Calhoun co., Mich.,.....Dip. and 15

Commended.

A two years old colt, owned by O. Eldridge, Bridport, Vermont,... .....Vol. Trans.
A black stud, owned by John Ayres, Grafton, Vt.,...Vol. Trans.

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A 3 years old stud colt, owned by Edson A. Burchard, Shoreham, Vermont,.....Vol. Trans.

A yearling colt, belonging to E. C. Everett, Vergennes, Vermont,.....Vol. Trans.

D. E. Hill, Bridport, Vt., "Black Hawk," 18 years old, having before received first premium, is awarded a..... Dip.

J. Ashford, Port Robinson, C. W., draught horse—very superior horse, arrived too late for regular committee, Dip. ahd $15

CLASS III.—SHEEP.

No. 26. FAT SHEEP.

Best fat sheep, long-wooled, 2 years and upwards, D. Rice, Easton, Washington,..... $5

2d best, Hungerford & Brodie, Adams, Jefferson,..... 3

Best long-wooled, under 2 years, J. A. & L. W. Rathbun, Springfield, Otsego,..... 5

3d best, cross-breed, 2 years and upward, Obadjah Howland, Owasco,.....Morrell's Shepherd.

Elnathan Gazley, Clinton, Dutchess co., had very superior long-wooled fat sheep, which were not seen by the Judges, by mistake of entry. A special committee award him 1st, 2d and 3d premiums, of $5, $3, and Morrell's Shepherd.

No. 27. LONG-WOOLED.

Best buck, 2 years and upwards, Elnathan Gazley, Clinton, Dutchess,..... $10

2d best, Elnathan Gazley, Clinton, Dutchess,..... 8

3d best, D. Rice, Easton, Washington,..... 5

Best buck, under 2 years, Hungerford & Brodie, Adams,... 10

2d best, J. A. & L. W. Rathbun, Springfield, Otsego,..... 8

3d best, James A. Jackson, Butternuts, Otsego,..... 5

Best pen 5 ewes, 2 years and upwards, Hungerford & Brodie, Adams,..... 10

2d best, J. A. & L. W. Rathbun, Springfield,..... 8

3d best, Samuel A. Curtiss, Canaan, Col.,..... 5

Best pen 5 ewes, under 2 y'rs, Hungerford & Brodie, Adams, 10

2d best, J. A. & L. W. Rathbun, Springfield,..... 8

3d best, Samuel A. Curtiss, Canaan,..... 5

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Best pen 3 buck lambs, William S. Gypson, Lowell P. O., Oneida, ... $5
2d best, Hungerford & Brodie, Adams, ... Morrell's Shepherd.
Best 3 ewe lambs, D. Rice, Easton, Washington, ... 5
2d best, Wm. S. Gypson, Lowell, Oneida, ... Morrell's Shepherd.

Discretionary.

Wm. Gypson, 2 buck lambs, Lowell, Oneida, ... S. S. Medal.

No. 28. Middle-Wooled.

Best buck, 2 years and upwards, Morris and Becar, ... $10
2d best, Z. B. Wakeman, Herkimer, ... 8
3d best, Leroy Mowry, Union Village, Washington, ... 5
Best buck, under 2 years, Morris and Becar, ... 10
2d best, Z. B. Wakeman, Herkimer, ... 8
Best pen 5 ewes, 2 years and upwards, Morris & Becar, ... 10
2d best, Z. B. Wakeman, Herkimer, ... 8
3d best, Obadiah Howland, Owasco, Cayuga, ... 5
Best pen 5 ewes, under 2 years, Morris & Becar, ... 10
2d best, Z. B. Wakeman, Herkimer, ... 8
Best pen, 3 buck lambs, Morris & Becar, ... 5
2d best, Leroy Mowry, Union Village, ... Morrell's Shepherd.
Best pen 3 ewe lambs, Z. B. Wakeman, Herkimer, ... $5
2d best, Morris and Becar, ... Morrell's Shepherd.

No. 29. Merinoes.

Best buck, 2 years and upwards, Joseph Haswell, Hoosick, . $10
Best pen 5 ewes, 2 y's and upwards, Joseph Haswell, Hoosick, 10
Best pen 5 ewes, under 2 years, Joseph Haswell, Hoosick, .. 10
Best pen 3 buck lambs, Joseph Haswell, Hoosick, ... 5
Best pen 3 ewe lambs, Joseph Haswell, Hoosick, ... 5

Discretionary.

Geo. W. McKie, Cambridge, French merino buck, ... $10
Peleg Weeden, Preston Hollow, French merino ewe, ... 5

No. 30. Saxons.

Best buck under 2 years, Joseph Haswell, Hoosick, ... $10
2d best, Charles W. Hull, New-Lebanon, ... 8

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Best pen 5 ewes, 2 years and upwards, Charles W. Hull, New-Lebanon, ... $10
2d best, Joseph Haswell, Hoosick, ... 8
Best pen 3 buck lambs, Joseph Haswell, Hoosick, ... 5
Best pen 3 ewe lambs, Joseph Haswell, ... 5

Highly commended.

Samples of wool, by Charles Morrell, Ludlowville, being in the judgment of the committee the finest wool presented, S.Med.

No. 31. CROSS BREED SHEEP.

Best buck, 2 years and upwards, Daniel S. Curtis, Canaan, Columbia, ... $10
2d best, Daniel W. Curtis, Canaan, ... 8
Best buck, under 2 years, Daniel S. Curtis, Canaan, ... 10
2d best, Joseph Haswell, Hoosick, ... 8
3d best, Daniel W. Curtis, Canaan, ... 5
Best pen 5 ewes, 2 years and upwards, Dan'l S. Curtis, Canaan, 10
2d best, Joseph Haswell, Hoosick, ... 8
3d best, Daniel W. Curtis, Canaan, ... 5
Best pen 5 ewes, under 2 years, Daniel S. Curtis, Canaan, .. 10
2d best, Daniel W. Curtis, Canaan, ... 8
Best pen 3 buck lambs, Joseph Haswell, Hoosick, ... 5
2d best, Daniel S. Curtis, Canaan, ... Morrell's Shepherd.
Best pen 3 ewe lambs, Daniel S. Curtis, Canaan, ... $5
2d best, Joseph Haswell, Hoosick, ... Morrell's Shepherd.

No. 33. FOREIGN SHEEP.

Best merino buck, Green & Pease, West Cornwall, Vt., ... $10
Best pen 5 ewes, George Campbell, West Westminster, Vt, . 10

Highly commended.

A fine "Silesian Merino buck," owned by George Campbell, West Westminister, Vt., ... Dip.
Also a fine lot "French Merino bucks and ewes," owned by Green & Pease, West Cornwall, Vt., ... Dip.
Also a fine lot of "Spanish Merino bucks and ewes," owned by F. H. Dean, West Cornwall, Vt., ... Dip.

No. 34. SWINE—OF LARGE BREED.

Best boar, 2 years old and upwards, L. G. Morris, Mount Fordham, (Berkshire,) $10

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2d best, L. G. Morris, Mount Fordham, (Berkshire,)..... 5
Best boar, 1 year old, L. G. Morris, Mount Fordham, (imported Suffolk, large,) 10
Best boar 6 months and under one year, Barnes Davis, Vernon, Oneida,..... 8
2d best, L. G. Morris, Mount Fordham, (Suffolk,) 4
Best breeding sow, 2 years old and upwards, L. G. Morris, Mount Fordham, (Suffolk,)..... 10
Best breeding sow, 1 year old, L. G. Morris, Mount Fordham, (Suffolk,) 10
2d best, George W. Herrick, Milton, Saratoga, ... 5
Best sow, 6 months and under 1 year, L. G. Morris, Mount Fordham, (Suffolk,) 8
2d best, Barnes Davis, Vernon, Oneida Co.,..... 4
Best lot of pigs, not less than five, under 10 months, Seth Whalen, Saratoga, ... 10
2d best, Thos. Bardwell, N. H., (foreign,) 5

Highly commended.

A superior Suffolk boar and 5 pigs, Nelson Richards, Vergennes, Vt., (foreign,)..... $5

No. 34. Swine—of Small Breed.

Best boar, 2 years old and upwards, Leroy Mowry, Union Village, Washington county, (Suffolk)..... $10
Best boar 1 year old, L. G. Morris, Mount Fordham, (Essex,) 10
2d best, L. G. Morris, Mount Fordham, (Suffolk,)..... 5
Best boar, 6 months and under one year, L. G. Morris, Mt. Fordham, (Essex,) 8
2d best, L. G. Morris, Mount Fordham,..... 4
Best breeding sow, 2 years old and upwards, L. G. Morris, Mount Fordham, (Essex,) 10
Best breeding sow, 1 year old, L. G. Morris, Mount Fordham, (Essex,) 10
Best sow, six months and under one year, L. G. Morris, Mt. Fordham, (Essex,) 8
2d best, G. W. Wilcox, Saratoga,..... 4
Best lot of pigs, not less than 5, under 10 months, L. G. Morris, Mount Fordham, (Essex,)..... 10

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No. 35. POULTRY.

Best lot of Dorkings, not less than 3, 1 cock and 2 hens, W. H. Southwick, New Baltimore, ... 3
2d, D. P. Newell & Co., Rochester,..... 2
Best lot of Polands, crossed with Golden Pheasants, not less than three, 1 cock and 2 hens, Isaac Fowler, Ballston Spa, 3
2d, John T. Andrews, West Cornwall, Ct ,..... 2
Best lot of black Spanish, not less than 3, 1 cock and 2 hens, W. H. Southwick, New Baltimore, ... 3
Best lot of Bolton Grays, not less than 3, 1 cock and 2 hens, W. H. Southwick, New Baltimore,..... 3
2d, John T. Andrews, West Cornwall, Ct.,..... 2
Best lot of Shanghae, not less than 3, 1 cock and 2 hens, D. P. Newell & Co., Rochester,..... 3
2d, W. H. Southwick, New Baltimore,..... 2
Best lot of Bantams, not less than 3, 1 cock and 2 hens, W. H. Southwick, New Baltimore,..... 3
2d, D. P. Newell & Co., Rochester,..... 2
Best lot of game, not less than 3, 1 cock and 2 hens, (Mexican,) D. P. Newell & Co., Rochester,..... 3
2d, S. Fensworth, Ballston Spa,..... 2
Best lot of turkeys, not less than 3, W. H. Southwick, ... 3
Best lot of small ducks, not less than 3, Joseph Daniels, Greenfield,..... 3
Best pair of large geese, W. H. Southwick,..... 3
2d, D. Price, Easton, Washington, ... 2
Best lot of poultry, owned by exhibitor, (statement furnished and verified,) W. H. Southwick, New Baltimore,..... 10
2d, D. P. Newell & Co., Rochester,..... 5
Best exhibition of pigeons, W. H. Southwick,..... 3
Best pair of "Jackoons," W. H. Southwick,..... Vol. Trans.
Seabright and African bantams, C. S. Haines, Elizabethtown, N. Y.,..... Vol. Trans.

CLASS IV.—PLOWING AND IMPLEMENTS.

No. 36. PLOWING MATCH.

First premium, Alexander Denton, Malta, Saratoga, "Trojan Plow," $10

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2d, Lawrence Kennedy, Galway, Saratoga, "Scotch plow,".. $8
3d, D. B. Westfall, Lyons, Wayne, "Wisconsin plow," 6
4th, Darius Clisby, Amsterdam, (Peter Ross, plowman,) "Amsterdam plow," 4
5th, Luther Comstock, Kirkland, Oneida, (James Brydon, plowman,) "Scotch plow," 2

No. 37. Farm Implements, No. 1.

Best farm wagon, William Cook, Saratoga Springs,..... $6
2d best, R. Lewis, Deerfield, Oneida, ... 3
Best harrow, J. E. Morgan, Deerfield, Oneida, ... 6
Best fanning mill, D. W. Seeley & O. Hatch, Carlisle, Schoharie,..... 6
2d best, J. H. Vandercook, Rockwood, Fulton,..... 3
Best hay and straw cutter, Baily West, "Self-sharpening Yankee Feed Cutter," Chickopee Falls, Mass.,..... 6
2d best, Eddy, Dyer & Co., Union Village, Washington,.... 3
Best horse rake, D. C. Colby, Westmoreland, N. H.,..... 4
Best hay, straw or corn stalk cutter, on a new improved principle, Woolworth & Truair, Syracuse, "Gale's Kentucky Straw Cutter,".....S. M.

Discretionary Premiums.

To J. N. & D. Elmore, Elmira, for grain separator, adapted to be attached to flouring mills, to clean wheat from chess, &c.,.....S. S. Medal.
To E. Brinton, Schenectady, for Rockaway, open and roll up top, and close top buggies and road sulkey, Diploma and $5

No. 38. Farm Implements, No. 2.

Best carriage harness, Thomas Job, Troy,..... $5
1 set gig harness, Thomas Job, Troy,..... 2
Best churn, John H. Remington, Castleton, Vermont,..... 5
2d best, George B. Clark, Madison,..... 2
Best cheese press, Nathan Cole, Herkimer,..... 5
2d best, M. A. Hackley, Bellville, Jefferson,..... 2
Best grain cradle, "Grape Vine," John Bailey, Onondaga,.... 3
Best scythe snath and scythe, John Bailey, Onondaga,..... 3
Best dozen wire brooms, Charles H. Toll, Schenectady,.... 3

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Best dozen Shaker, or twine tied brooms, Charles H. Toll, Schenectady,..... $3
2d best, J. L. Brownson, Amsterdam, ... 2
Very fine specimen fancy brushes, discretionary, to J. L. Brownson, Amsterdam,.....Trans.

No. 39. FARM IMPLEMENTS, No. 3.

Best portable sawmill, for wood, fences, and farm use, E. W. Badger & Co., Fly Creek, Otsego,..... $10
2d best, Messrs. Emery & Co., Albany, ... 8
Best corn sheller, Eddy, Dyer & Co., Union Village, Wash., ... 6
2d best, John Benedict, Saratoga,..... 4
Best dog power churning machine, John Benedict, Saratoga, on the endless chain principle, being the only one exhibited, is awarded,..... 3
Best and most numerous collection of agricultural implem'ts, Messrs. Emery & Co., Albany,..... 25
2d best, Eddy, Dyer & Co., Union Village,..... 15

No. 40. MACHINERY.

For the most valuable machine or implement, for the farmer, either newly invented, or an improvement on any one in use, John S. Wright, Chicago, Ill., "Atkins' Self Raking Reaper,".....Diploma and S. M.
Best hay and cattle weighing scales, E. & T. Fairbanks, St. Johnsbury, Vermont,..... $20
Best hay press, for pressing hay, Deering & Dederick, Alb'y, Silver Medal.

Discretionary Premiums.

A. W. Gay & Co., 118 Maiden Lane, New-York, force pump, Dip. and S. S. M.
L. P. & W. F. Dodge, Newburgh garden pump, Dip. and S. S. M.
John Jones, Little Falls, portable cider mill,..... Dip.
Henry O. Williams, Sunderland, Mass., for Woodward's improved corn planter and manure dropper,..... Dip.
Dobbs & Adams, Albany, improved method of banding machines,..... Dip.
Emery & Co., Albany, separator and cleaner, Dip. and S. Medal.

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CLASS V.—DAIRY, SUGAR AND HONEY, FLOUR, &c.

No. 42. Butter.

Best 25 lbs. of butter, made in June, O. P. Frazier, Le Ray, Jefferson, ... $15

Best lot of butter, by girls under 21 years of age, made at any time. Henrietta Daniels, Greenfield,.....Silver Cup.

2d best, Helen M. Parker, Trenton, Oneida,.. Pair butter knives.

No. 43. Cheese.

Best 100 lbs. of cheese, less than 1 year old, S. & D. Bonfoy, Winfield,..... $20

3d best, S. & D. Bonfoy, Winfield,..... 10

No. 44. Sugar and Honey.

Best 20 lbs. of honey, J. S. Eastman, Deerfield,..... $5

No. 45. Grain and Seeds.

Best sample white winter wheat, 1 bbl., Obadiah Howland, Cayuga,..... 5

2d best, George B. Powell, Milton, Saratoga,..... ... 3

Best sample of red winter wheat, 1 bbl., Obadiah Howland, Cayuga,..... 5

2d best, Peter Crispell, jr., Hurley, Ulster,..... 3

Best sample of rye, 1 bbl., P. Crispell, jr., Hurley, Ulster,... 5

Best sample of oats, 1 bbl., P. Crispell, jr., Hurley, Ulster,... 5

2d best, George B. Powell, Milton, Saratogo,..... 3

Best sample of barley, 1 bbl., Obadiah Howland, Cayuga,... 5

Best sample of Indian corn, 1 bbl., Peter Crispell, jr., Hurley Ulster,..... 5

2d best, S. H. Williams, New-Hartford, Oneida,..... 3

Best sample of buckwheat, 1 bushel, Joseph Daniels, Greenfield, Saratoga,..... 3

2d best, Obadiah Howland, Owasco, Cayuga,..... 2

Best sample of timothy seed, 1 bushel, Obadiah Howland, Cayuga,..... 3

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Discretionary Premiums.

O. Howland, Owasco, Cayuga, for a barrel of marrowfat peas,..... $1

D. S. Davis, Saratoga, for a bushel of very fine white flint wheat, ...Vol. Trans.

No. 46 VEGETABLES.

12 best white table turnips, J. C. Rouse, Saratoga Springs,.. $3
2d best, Patrick Raley, Saratoga Springs,..... 2
12 best carrots, Patrick Raley, Saratoga Springs, ... 3
2d best, J. C. Rouse, Saratoga Springs, ... 2
12 best beets, N. Culver, Arcadia, Wayne, ... 3
2d best, John Gifford, Saratoga,..... 2
12 best parsnips, Patrick Raley, Saratoga,..... 3
2d best, Theodore Backus, Rochester,..... 2
12 best onions, J. C. Rouse, Saratoga,..... 3
2d best, Theodore Backus, Rochester,..... 2
6 best heads of cabbage, N. Culver, Arcadia, Wayne, ... 3
2d best J. C. Rouse, Saratoga, ... 2
12 best tomatoes, P. Bennett, Mechanicville,. 3
2d best, Patrick Raley, Saratoga,.... 2
2 best purple egg plants, A. M. Hart, Saratoga,..... 3
12 best sweet potatoes, George W. Herrick, Saratoga, ... 3
2d best, Patrick Raley, Saratoga,..... 2
Best half peck of Lima beans, N. Culver, Arcadia, Wayne, 3
2d best, N. & E. S. Hayward, Rochester,..... 2
Best bunch of double parsley, Z. M. Saunders, Albany,.... 3
2d best, Patrick Raley, Saratoga, ... 2
3 best garden squashes, J. C. Rouse, Saratoga,..... 3
2d best, Seth Whalen, Milton, Saratoga, ... 2
3 best large squashes, J. C. Rouse, Saratoga, ... 3
12 best ears of yellow seed corn, Obadiah Howland, Owasco, Cayuga,..... 3
2d best, Isaac Frink, Saratoga, ... 2
12 best ears of white seed corn, N. Culver, Arcadia, Wayne, ... 3
2d best, O. L. Barbour, Saratoga,..... ... 2

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Best half peck of table potatoes, "Silver Skins," S. G. Smith, Halfmoon, ... 3
2d best, Knowlton Howland, Mechanicville,..... 2
Best and greatest variety of vegetables raised by exhibitor, Theodore Backus, Rochester,. 5
2d best, N. Culver, Arcadia, Wayne, ... 3
Best new and valuable variety of vegetable, with evidence of its superiority, potatoes of new varieties, C. E. Goodrich, Utica, ... 3

Discretionary Premiums.

The judges remark that the articles on exhibition were creditable to exhibitors; a considerable number of which did not come within the list of premiums, among which pie plant, (rhubarb,) Large Turkish or Giant, by Z. M. Saunders, Albany, Trans.

To Z. M. Saunders, Albany, for a sample of celery, ... Trans.
172 varieties of beans, 200 varieties of potatoes, and 26 varieties of corn, D. A. Bulkley, Williamstown, Mass., S. Medal.

Fine specimens of mottled corn, and two new varieties of sweet corn, T. Backus, Rochester, Patent Office Report.

Fine sample of hops, D. B. King, Pat. Office Report.

Fine samples of pine apple tomato, and peppers, P. Bennett, Mechanicville, Trans.

Fine sample of cluster beans, fine basket cranberries, and fine sample of ochra, J. B. Finlay, Saratoga Springs, Trans.

The collection of new varieties of potatoes, by C. E. Goodrich, were evidences of the perseverance and success of this gentleman in his experiments, of which the committee are proud, and desire to add their tribute of praise to his merits.

No. 47. Flour, &c.

Best sample of corn or wheat farina, Hecker & Bro., S. S. Medal.
C. J. Hill & Son, for superior barrel of flour, ... Dip.

Discretionary Premium.

Jonathan T. Johnson, New-York, for three samples of soap and sample of starch polish,..... Dip. and Medal.

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CLASS VI.—DOMESTIC MANUFACTURES.

No. 48. DOMESTIC MANUFACTURES, No. 1.

Best pair of woolen blankets, Jane A. Harrell, White Creek, Washington, ... $8
2d best, Mrs. Seth Whalen, Saratoga, ... 6
3d best, Sarah D. Wheeler, Saratoga, ... 4
Best 10 yards woolen cloth, Mrs. B. R. Voorhees, Amsterdam, ... 8
2d best, Mrs. Joel B. Noyes, Vernon, Oneida, ... 6
Best 10 yards woolen flannel, Mrs. Joel B. Noyes, Vernon, Oneida, ... 8
2d best, M. L. Hungerford, Watertown, Jefferson, ... 6
3d best, Pamelia R. Dean, New Lebanon, Columbia, ... 4
4th best, Mrs. B. R. Voorhees, Amsterdam, ... 2
Best 15 yards woolen carpet, M. L. Hungerford, Jeff., ... 8
Best hearth rug, Sarah D. Wheeler, Saratoga Springs, ... 4
Best rag carpet, Mrs. Joel B. Noyes, Vernon, Oneida, ... 6
2d best, Mrs. L. T. Marshall, Vernon, Oneida, ... 4
3d best, Mrs. Isaac Clement, Halfmoon, ... 2
4th best, Jane L. Carrigan, Saratoga Springs, ... S. S. Medal.

Discretionary Premium.

Sarah D. Wheeler, Saratoga Springs, flannel sheets, . Vol. Trans.

No. 49. DOMESTIC MANUFACTURES, No. 2.

Best double carpet coverlet, Mrs. Joel B. Noyes, Vernon, Oneida, ... $6
2d best, Sarah D. Wheeler, Saratoga Springs, ... 4
3d best, Mrs. C. M. Hoyt, Saratoga Springs, ... 2
4th best, Mrs. A. M. Darrow, Greenfield, Saratoga, ... 1
Best 10 yards kersey, Mrs. S. G. Smith, Halfmoon, ... 6
2d best, Mrs. T. H. Tompkins, Greenfield, Saratoga, ... 4
3d best, Sarah D. Wheeler, Saratoga Springs, ... 2
Best pair woolen knit stockings, Mrs. T. H. Tompkins, Greenfield, Saratoga, ... 2
2d best, Mrs. Wm. Dunning, Greenfield, Saratoga, ... 1
3d best, Miss Mary H. Seymour, Waterford, (11 years old,) S. S. Medal.
Best pair woolen fringe mittens, Miss Mary E. Allen, N. Galway, ... 2

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2d best, Mrs. O. W. Crane, St. Lawrence county,.....

Discretionary Premiums.

Best pair worsted knit stockings, Sarah D. Wheeler, Sa
toga Springs,..... Downing on

Best woolen yarn, Mrs. Joel B. Noyes, Vernon, Oneic
Thomas on

Best worsted mits, Mrs. A. P. Griswold, Saratoga Sprin
Barry's Fruit G

No. 50. Domestic manufactures, No 3.

Best 10 yards linen, Jane A. Harrell, White Creek, Was
ington,.....

2d best, Emily J. Clark, Pittstown,.....

3d best, Mrs. J. B. Noyes, Vernon, Oneida, ...

4th best, Mrs. James T. Van Namee, Pittstown,.....

Best 10 yards linen diaper, Pamelia R. Dean, New Lebano
Columbia,.....

2d best, Emily J. Clark, Pittstown,..... .....

3d best, Mrs. Mary Morey, Milton,.....

4th best, Mrs. L. T. Marshall, Vernon, Oneida,.....

Best 15 yards tow cloth, Mrs. J. T. Van Namee, Pittstow

2d best, Mrs. William Wilson, Saratoga,.....

Best pair of cotton knit stockings, Mrs. B. R. Voorhees, An
sterdam, ...

Best pair linen knit stockings, Miss Maria McMasters, Ch
nango,.....

2d best, Mrs. B. R. Voorhees, Amsterdam,.....

Best pound of linen sewing thread, Mrs. B. R. Voorhee
Amsterdam,.....

2d best linen yarn, Jane A. Harrell, Washington, ...

Highly commended.

12 yards linen gambroon, superior article, Pamelia R. Dea
New-Lebanon, Columbia,.....S. S. I

1 pair linen hose, Sarah D. Wheeler, Saratoga,.....Di

10 yards cotton and linen diaper, Emily V. Clark, Thomas'

No. 51. Manufactures other than domestic.

Best piece of woolen carpet, S. E. Paine, Saratoga Sprin

Woolen shawls, James Roy & Co., West Troy, Dip. and

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No. 52. NEEDLE WORK, &c.

Best silk embroidery, Mrs. C. O. Newton, Cortland,..... $3
Best shawl do Peter Wetherwax, Butler, Wayne,.... 3
Best cloak or cape embroidery, Mrs. B. R. Voorhees, Amsterdam,..... 3
Best French needle work, collar and handkerchief, Miss E. M. Bacon, Waterloo, Seneca, ... 3
2d best, Mrs. George Cook, Cortland,..... 2
Best specimen worsted embroidery, Miss E. Jordan, Greenbush,..... 3
2d best, Mrs. J. B. Wiser, Saratoga Springs,..... 2
3d best, Miss M. Stevenson, New-York city,..... 1
Best Ottoman cover, Peter Wetherwax, Butler,..... 3
Best embroidered piano or table spread, Mrs. P. Van Wyck, Northumberland,..... 3
Best silk bonnets, domestic, Charles W. Burlingame, Saratoga Springs,..... 3
2d best, Wm. Simons, 564 Broadway, New-York,..... 2
Best ornamental shell work, Mrs. Gen. E. P. Walton, Montpelier, Vt.,..... 3
Best specimen wax flowers, Miss M. E. Olmstead, Delaware,..... 3
2d best, Miss Eleanor Jordan, Greenbush,..... 2
3d best, Miss Mary J. Meeker, Albany,..... 1
Best specimen crayon painting by lady, Miss Harriet S. Brown, Boston,..... 3
2d best, Mrs. C. A. Buell, Schenectady,..... 2
3d best, Carolina M. Hodgman, Saratoga Springs,..... 1
Best oil painting, (landscapes) by lady, Mrs. E. C. Pond, Saratoga Springs,..... 5
3d best, Miss C. O. Perry, Milton, Saratoga, ... 2

Discretionary Premiums.

Miss Mary H. Seymour, Waterford, for specimens of needle work, ... $1
Mrs. T. Van Skeline, New-York, 1 basket paper flowers, S. S. M.
Mrs. Mary J. Morey, Milton, Saratoga co., needle work, S. Medal.
Mrs. J. B. Wiser, Saratoga Springs, needle and leather work, $3
Mrs. A. Anderson, Saratoga, bed quilt,..... 1

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Miss Mary H. Seymour, Waterford, Needle work,. .....
Mrs. Joel B. Noyes, Vernon, Oneida, lamp mats, ...
Miss Helen Freeman, Saratoga Springs, embroidery,.....
Miss Delia Lamberson, Pittsfield, Mass., needle work,.....
Mrs. Martha M. Runyon, Saratoga Springs, coral basket,..
Mrs. B. R. Voorhees, Amsterdam, needle work,.....
Mrs. Mary J. Morey, Milton, Saratoga, chair tidy, &c.....
Mrs. J. M. Smith, Mechanicville, chair tidy, &c.,.....
Mrs. Isaac Clement, Halfmoon, embroidered handkerchief,
Mrs.R. S. Burtis, Mechanicville, child's cloak,.....
Mrs. J. M. Andrews, Saratoga Springs, needle work,.....
Miss S. M. Davison, " worsted embroidery
Mrs. Mary A. Darrow, " lace veil,.....
Mrs. P. H. Cowen, " needle work,.....
Mrs. A. Bockes, " leather work,.....
Miss Elizabeth Eddy, tidy,.....S.
Mrs. Charles Fowler, Halfmoon, quilts,.....
Miss Louisa R. Hunter, Saratoga Springs, needle work,....
Miss C. L. Richards, Troy, white counterpane,.....
Mrs. M. W. Demarest, 67 Canal street, New-York, ladies dress patterns, and chart for cutting dresses,.....

CLASS VII.—FLOWERS AND FRUITS.

No. 53. Flowers.

Greatest variety and quantity of flowers, William Newcomb Pittstown,.....
2d do. James Wilson, Albany,.....
Greatest variety of dahlias, James Wilson, Albany, ...
2d do. J. Battey, Keeseville,.....
Best 24 dissimilar blooms, J. Battey, Keeseville,.....
2d do. William Newcomb, Pittstown,.....
Best single dahlia, William Newcomb, Pittstown,.....
2d do. J. Wiison, Albany,.....
Greatest variety of roses, A. Frost & Co., Rochester,.....
2d do. Ellwanger & Barry, Rochester,.....
Best 10 varieties phloxes, J. Wilson, Albany,.....
2d do. Ellwanger & Barry, Rochester,.....
Greatest variety of verbenas, Ellwanger & Barry,.....

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2d greatest variety of verbenas, J. Wilson, Albany,..... $3
Best 12 varieties, A. Frost & Co., Rochester,..... 2
Best collection of German asters, Wm. Newcomb, Pittstown, 5
Best seedling, William Newcomb, Pittstown,..... 2
Best and greatest variety of pansies, Wm. Newcomb, Pittstown,..... 3

Amateur List.

Greatest variety and quantity of flowers, Mrs. J. T. Van Namee, Pittstown,..... $5
2d do. Mrs. P. Bennett, Mechanicville,..... 3
Greatest variety of dahlias, Mrs. L. E. Smith, Mechanicville, 5
2d do. Mrs. P. Bennett, Mechanicville,..... 3
Best 12 dissimilar blooms, Geo. Warren, Mechanicville,... 3
2d do Mrs. L. E. Smith, Mechanicville,..... 2
Best 6 varieties, Geo. Warren, Mechanicville, ... 2
2d do Mrs. P. Bennett, Mechanicville,..... 1
Best single variety, G. Warren, Mechanicville,.... S. S. Medal.
Best 6 varieties of phloxes, Mrs. Wm. Newcomb, Pittstown, $3
Best seedling, Mrs. Wm Newcomb, Pittstown,..... ... 1
Greatest variety of verbenas, Mrs. Wm. Newcomb, Pittstown, 5
2d do Mrs. T. Mabbett, Mechanicville,..... 3
Best 6 varieties, Mrs. T. Mabbett, Mechanicville,..... 3
2d do Mrs. Wm. Newcomb, Pittstown,..... 2
Best 3 varieties, Mrs. Wm. Newcomb, Pittstown,..... 2
Best seedling, Mrs. T. Mabbett, Mechanicville,..... 2
2d do Mrs. J. B. Finlay, Saratoga Springs, ... 1
Best collection of German asters, Mrs. T. Mabbett, Mechanicville,..... 5
2d do Mrs. J. T. Van Namee, Pittstown,..... 3

General List—Open to all Competitors.

Best floral design, Mrs. T. Mabbett, Mechanicville,..... $5
2d do Mrs. P. Bennett, Mechanicville,..... 3
Best floral ornament, Geo. Warren, Mechanicville, ... 5
Best hand bouquet, flat, James Wilson, Albany, ... 3
2d do Mrs. P. Bennett, Mechanicville,..... 2
Best hand bouquet, round, James Wilson, Albany,..... 3
2d do Mrs. G. W. Wilcox, Saratoga,.. 2
Best basket bouquet, with handle, Mrs. I. M. Smith, ... 3

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For the most beautifully arranged basket of flowers, Mrs. Emily Newcomb, Pittstown, ... $3

Best exhibition of dried specimens of plants, Mrs. Isaac Clement, Halfmoon, ... S. S. Medal.

Highly commended.

Mr. Wm. Bowen, Greenfield, seedling dahlias.

Evergreen pagoda, by Mrs. Rockwell Putnam.

Evergreen stand and basket fruit and flowers, by Miss Mary Watrous.

Design, star, eagle, and American banner, by Mr. J. R. Smith, and made by ladies of Saratoga.

The decorations of Floral Hall, by the ladies of Saratoga.

(The premium bouquets of Mr. James Wilson were presented by him to Mrs. W. Putnam, Miss Wayland, of Saratoga, and Mrs. Williams, of Albany, for their praiseworthy exertions in fitting up Floral Hall.)

No. 54. Fruit.—Amateur List.—Apples, Pears and Peaches.

For the best 20 varieties of good table apples, 3 of each variety, named and labelled, grown by exhibitor, N. & E. S. Hayward, Rochester, ... $10

2d best, J. H. Case, New Hartford, Oneida, ... 7

3d best, E. R. Jones, Ballston, ... 5

For best ten varieties of table apples, James T. Van Namee, Pittstown, ... 8

2d best, N. & E. S. Hayward, Rochester, ... 5

3d best, E. R. Jones, Ballston, ... 3

4th best, J. H. Case, New Hartford, Oneida, ... Downing's Fruit.

For best fall seedling apple, for all purposes, with description of tree, history of its origin, &c.; one dozen specimens exhibited, E. R. Jones, Ballston, ... $5

Best basket of standard fruits, at least of three varieties, Robert McDonnell, Saratoga, ... 6

2d best, James T. Van Namee, Pittstown, ... 4

For the best 12 varieties of pears, named and labelled, D. T. Vail, Troy, ... 8

2d best, E. R. Jones, Ballston, ... 6

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Best 6 varieties of pears, 3 of each variety, D. T. Vail, Troy, $5
2d best, Elisha Dorr, Albany,..... 3
3d best, H. G. Dickinson, Lyons, ... 2
4th best, E. R. Jones, Ballston, ... Thomas' Fruit Cult.
Best collection of newly introduced pears, with a description, &c., D. T. Vail, Troy,.. Diploma and Hovey's Colored Fruits.
Best 6 varieties of peaches, named and labelled, N. & E. S. Hayward, Rochester,..... 5
Best 3 varieties of peaches, named and labelled, P. Bennett, Mechanicville, ... 3
2d best, N. & E. S. Hayward, Rochester,..... 2
Best 12 peaches, Robert McDonnell, Greenfield, Saratoga, 3
2d best, N. & E. S. Hayward, Rochester,..... 2
3d best, H. G. Dickinson, Lyons, Wayne,.....Trans.
Best seedling variety, 6 specimens, Elisha Dorr, Albany,... $3

No. 55. PLUMS, NECTARINES, QUINCES, GRAPES, &c.,

Best collection of plums, 6 specimens each variety, E. Dorr, Albany,..... $5
2d best, P. Bennett, Mechanicville, ... 3
3d best, James T. Van Namee, Pittstown, ... 1
Best 4 varieties of good plums, 6 specimens each, E. Dorr, Albany,..... 3
Best 12 plums, choice variety, Schuyler gage, E. Dorr, Albany,..... 2
2d best, James T. Van Namee,..... Trans.
Best 12 quinces, P. Bennett, Mechanicville, ... 3
2d best, N. & E. S. Hayward, Rochester, ... 2
3d best, Robert McDonnell, Greenfield,..... ..... Trans.
Best and most extensive collection of good native grapes, grown in the open air, N. & E. S. Hayward, Rochester,.. $5
2d best, P Bennett, Mechanicville,..... 3
3d best, E. Dorr, Albany,..... 2
Best 3 varieties of native or foreign grapes, grown under glass, John Greig, Canandaigua, ... 5
Discretionary, 3 bunches Sweet water grapes, P. Barber, Homer, Cortland, ... Dip.

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Best dish of native grapes, E. Dorr, Albany,..... Trans.
Best specimen of any variety of watermelons, John Ingersoll, Milton, ... $3
2d best, N. Culver, Arcadia, Wayne,..... 2
3 best, J. M. Andrews, Saratoga Springs,..... 1
Discretionary, Mr. Cruger's gardener, Tivoli, Dutchess, ..S. S. M.
Best collection of watermelons, J. M. Andrews, Saratoga Sp's, $3
2d best, John Ingersoll, Milton,..... 2
Best specimen of muskmelons, John Ingersoll, Milton,..... 3
2d best, G. H. Cherry, Rochester,..... 2
3d best, C. M. Davidson, Saratoga Springs, ... 1
Best peck of domestic culture cranberries, Knowlton Howland, Mechanicville, ... 5
Discretionary, Everbearing raspberry, Knowlton Howland, Mechanicville, ...Thomas's Fruit.

No. 56. Fruit.—Professional list.—Apples, Pears and Peaches.

Best 20 varieties of good table apples, grown by exhibitor, George H. Cherry, Rochester,..... ..... $10
2d best, A. Frost & Co., Rochester,..... 7
3d best, Ellwanger & Barry, Rochester,..... 5
4th best, John Morse, Cayuga Bridge,.....Trans.
Best 10 varieties table apples, John Morse, Cayuga Bridge,.. $8
2d best, Thorp, Smith, Hanchett & Co., Syracuse,..... 5
Best basket of standard fruits, John Morse, Cayuga Bridge,.. 6
Best 12 varieties of pears, Ellwanger & Barry, Rochester,... 8
2d best, John Morse, Cayuga Bridge, ... 6
3d best, Thorp, Smith, Hanchett & Co., Syracuse, ... 4
4th best, James Wilson, Albany, ...:Barry's Fruit Garden.
Best 6 varieties of pears, three of each variety, Ellwanger & Barry, Rochester,..... $5
2d best, Maxwell Brothers, Geneva,..... 3
3d best, John Morse, Cayuga Bridge, ... 2
4th best, Thorp, Smith, Hanchett & Co., Syracuse, Thomas' Fruit.
Best collection of newly introduced pears, with a description, &c., Ellwanger & Barry, Rochester,.....Dip. and Hov. C. F.
Best 6 varieties of peaches, John Morse, Cayuga Bridge,.... $5
2d best, John Morse, Cayuga Bridge, ... 3

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Best 3 varieties of peaches, John Morse, Cayuga Bridge,.... $3
2d best, John Morse, Cayuga Bridge,..... 2
Best 12 peaches, John Morse, Cayuga Bridge,..... 3
2d best, John Morse, Cayuga Bridge, ... 2

No. 57. PLUMS, NECTARINES, QUINCES, GRAPES, &c.

Best collection of plums, Ellwanger & Barry, Rochester,... $5
Best 4 varieties of good plums, James Wilson, Albany,..... 3
Best and most extensive collection of good native grapes, grown in the open air, A. Frost & Co., Rochester, ... 5

No. 58. FOREIGN FRUITS.

151 varieties of pears, Hovey & Co., Boston,.....S. Medal.
9 varieties of apples, N. Richards, Vergennes, Vt.,.....Trans.
1 pomegranate, B. F. Moseley, Albany,....Patent Office Report.

No. 59. PAINTINGS, &c.

Best specimen of painting in oil, by American artist, Mrs. Martha Goodrich, Waterford, "Trapper's Last Shot," Diploma and S. Medal.
Best specimen mono-chromatic paintings, A. G. Shaver, Geneva, ... Dip.
1 frame Daguerreian work, Wm. Tomlinson, Troy,..... Dip.
1 case butterflies, Dr. A. Fitch, Washington,.....S. S. M.
4 specimens of penmanship, Mrs. B. R. Voorhees, Amsterdam, Dip.
2 crayon drawings, E. A. Brown,..... Dip.

CLASS VIII.—STOVES AND DISCRETIONARY.

No. 60. STOVES—COOKING.

Best cooking stove for wood fire, "Crescent," to Warren Sweatland, Crescent, Saratoga,.....S. Medal.
2d best, "Stewart's Air Tight," to S. B. Terwilliger, Saratoga Springs,.....S. S. M.
Best cooking stove for coal, "Stewart's Air Tight," to S. B. Terwilliger, Saratoga Springs,.....S. Medal.
2d best, to Warren Sweatland, Saratoga,.....S. S. M.

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Best furnace or other apparatus for warming houses, economy of construction and consumption of fuel, and security of premises to be taken into consideration, Chilton's Ventilating Hot Air Furnace, Wands & Warren, of Albany,..S. Medal.

Albert Gladwin, New-York, for foot stove, cooking stove, and lantern combined, F. Arnold's patent,.....S. S. M.

Mann, Torrence & Co., Troy, for McGregor's patent cauldron furnace,..... S. S. M.

No. 61. Stoves—parlor.

Best ornamental parlor stove, "Illuminator," L. Potter & Co., S. M.

Best hall stove for coal, Warren, Sweatland & Co.,.....S. M.

2d best, for wood, Warren, Sweatland & Co.,..... ..S. S. M.

No. 62. Silver Ware.

Best exhibition of silver ware and jewelry, &c., Hood & Tobey, Albany,.....S. M

Best exhibition of silver ware, Williams & Co., Albany,....S. M.

Plated door plates, door trimmings and harness trimmings, J. McKinney, Troy, N. Y.,.....S. M.

No. 63. Discretionary.

Jones' Typographer, John Jones, Clyde, N. Y.,..... $3

Case Whips, Thomas Job, Troy,..... 3

Portable Scroll and portable sawing machine, R. W. Parker, S. S. Med. and Dip.

Yale's magic lock, Perry, Philleo & Co., Newport, N. Y., S. S. M. and Dip.

Two forges and bellows, L Potter, Troy, Dip. and Pat. Office Rep.

Portable hot air furnace, L. Potter, Troy,.....Dip. and $5

Pendulum level, Timothy Gibson, Nicolville, St. Lawrence, Dip.

Four church bells, Jones & Hitchcock, Troy,.....Dip. and $5

McDougall's travellers' security and burglar's alarm, Albert Wells, New-York,.....S. Med. and Dip.

5 sets hollow ware, Warren, Sweatland & Co., Crescent, Dip. & $3

Brass work and plumbing, &c., Pierce & Southwick, Troy, Dip. and $5

Head blocks for saw mills, T. H. Russell, Taftsville, Vt., S. S. Medal and Trans.

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Automatic apple parer, Sargent & Foster, Shelburne Falls, Mass., ... Trans. & S. S. M.
Iron castings, imitation of bronze statutes, life size, Janes Beebe & Co., 356 Broadway, N. Y., ... Dip. & $5.
Stocks and dies, Wm. Platt & Co., Waterford,..... S. S. Medal.
Scroll chuck, Wm. Platt & Co.,..... Diploma and Patent Rep.
Case of dentistry and stock, Dr. D. Ross, Troy, N. Y., S. S. Medal and $5.
5 church bells, A. Meneley's Sons, West Troy,..... Dip. and $5
Patent rat trap, J. J. Vedder, Schenectady,.... Dip. and Trans.
Marking brands, J. D. Welch, Albany,.... ..... Trans.
Machine belt clasp, Albert M. Smith, Rochester,.... Sil. Medal.
Door plates, speaking trumpets, &c., J. McKinney, Troy,... 3
Model pump, Daniel Flagg, Pembroke, N. H.,..... Trans.
Yale's patent chilled iron, for safe doors, Perry, Philleo & Co., Newport, N. Y.,..... Patent Office Rep.
Turbine water wheel, R. Daniels, Woodstock, Vt.,.... S. Medal.
Case dentistry, J. G. Ambler, New-York,..... Dip. and Med.
Static regulator, for fire under steam boilers, Joseph Woodruff, Rahway, N. J.,..... Trans.
Steel plated sleigh shoes, Willis Hurlbut, Saratoga Springs, S. S. Medal.

No. 64. DISCRETIONARY, &c.

Skeleton buggy, Thos. Lape, Lansingburgh,..... S. S. Medal.
Flour barrel staves, cut by machinery, Rutland Stave Company, Rutland, Vt.,..... Dip.
Specimen of oak graining, W. H. Stratton, Saratoga Springs, S. S. M.
Improved window sash, Mighell Nutting, Portland, Me.,.. Dip.
Model of self loading cart, Samuel Parks, Gratiot, Wis., Vol. Tr.
Model grist mill, Ephraim Bradley, Saratoga Springs,. ... Dip.
Carriage hubs, J R. Frink, Galway, Saratoga, ... Vol. Trans.
Patent bee hive, E B. Waterhouse & A. R. Bennett, Rochester,..... S. S. M
Gothic door and improved window, D. N. Brown, Saratoga Springs,..... Dip. & S. S. M.
Patent window sash for setting glass without putty, R. R. Johnson, Covington, Ky.,..... Dip.

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Bass viol sounding rod, dress box, Isaac Spaulding, Saratoga Springs,..... S. S. Medal.
1 model farm gate, John W. Vandyke, Saratoga,.... Vol. Trans.
Patent model pig pen and trough, R. M. Abbey, Enfield, Ct., ... Vol. Trans.
3 pails made of cedar and butternut, exceedingly well made, S. S. & W. Flint, Crown Point, N. Y., ... S. S. M.

No. 65. Discretionary.

Lot of plain and fancy soap, Barton & Stickney, Troy, Dip. and $2.
Case of hats, Wm. Frothingham, Albany, ... Dip. and $2.
Fancy leather work, Miss A. E. Andrews, Sar. Springs,.... Dip.
Ornamental leather work, Miss S. M. Davidson, Saratoga Springs,..... S. Medal.
Slate roofing, Allen W. Dewey, Rutland county, Vt., Vol. Trans.
2 marble monuments, &c., Wm. H. Young, Troy, .. Dip. and $5
Basket of peat or turf, Alger & Wood, Greenfield, Saratoga, Norton's P. Essay.
Buckskin mittens and gloves, R. B. Chadsey, Gloversville, S. M.
2 samples roofing slate, C. H. Bull, Hebron,..... Dip and $2
Samples of roofing slate, H. Williams, Fair Haven, Vt., ... Dip.
Mineral paint, C. S. Moore, Plattsburgh, N. Y.,.... Dip. and $3
1 doz. finished calf skins, H. Perry & Co., Saratoga Springs, V. Tr.
Specimens of maps, J. Disturnell, New-York, ... Diploma.
Ladies' dress case, &c., Thomas Job, Troy, ... Dip. and $5
Show case and fancy articles, Dr. Lorin B. Putnam, Saratoga Springs,..... $1
Houghton's magneto-electric machine, F. T. Hill, Saratoga Springs,..... Dip. and S. Med.
Case cigars, A. Marcus, 22 South Pearl-street, Albany, Dip & $1
Specimen of card writing, Morris W. E. Purchase, Elmira, Dip. and $3
Cigars and cut tobacco, Payne & McNaughton, Albany, S. Medal and $1
Ladies' dress hat, L. Potter, Troy, ... S. Medal and $1
2 cases ladies' shoes, B. Shaw, New-York,..... Diploma.
Marble and slate, A. Adams & Co., Fairhaven, Vt., .. S. Medal.
Brown's hair lustral, G. N. H. Brown, New-York, ... Diploma.

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Buckskin gloves and mittens, with special commendation, H. Churchill & Co., Gloversville,..... Dip. and Sil. Medal.
Fine cut chewing tobacco and snuff, J. B. Hoffman & Co., Albany,..... Dip. and $2.
N. F. Coleman, Saratoga Springs, music stand,.... ... S. Medal.
Isaac Smith, New-York, specimen of brick,..... ..... Dip.
Emery & Co., Albany, India rubber belting,..... Dip.
R. C. Wheeler, Middle Granville, 1 block of slate, S. Med. & $1
J. H. Brown & Co., Boston, 18 bottles of shoe blacking,.... Dip.
Charles Philips, Saratoga Springs, 10 specimens paper hangings, ... Dip.
James Stanbrough, Newark, Wayne, one single harness, (patent,)..... Dip. and Sil. Medal.
Myron & Utter, Whitehall, specimens of roofing slate,..... Dip.
Wm. Hughes, Castleton, Vt., specimens of roofing slate,... Dip.
Stereotype plates, very fine specimens, Julius Bruso, Saratoga Springs,..... Dip.
George F. White, Saratoga Springs, beautiful and highly finished specimens of printing, dedicated to New-York State Agricultural Society, ... Dip.

SPECIAL COMMITTEE ON ARTICLES OMITTED.

Cider mill, with root cutter attached, exhibited by Philip Garges & Co., Brockport, N. Y., ... Diploma and S. Medal.
Portable cider mill, by W. O. Hickock, A. L. Hall, agent, Harrisburgh, Pa., having a strainer attached, and requiring no straw,..... ..... Commended—Trans.
Seed mill, F. M. Harvey & Son, Amsterdam, which appears to be a remarkably cheap and well constructed machine, V. Tr.
Drain tile machine, exhibited by John A. Charnock, of England, for the manufacture of drain tile by a simple and economizing process,..... .....Dip. and Med.

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AWARD OF PREMIUMS, FEBRUARY, 1854.

Farms.

3d premium to Sluman L. Wattles, Sidney Center, Delaware, Silver Cup, $20

Best plan of barn and out buildings, Lewis F. Allen, Black Rock,..... .....Cup, $25

Experiments with Potatoes.

1. H. H. Eastman. Marshall, Oneida,..... $125
2. Volney Burgess, Chatham, Columbia,..... 75
3. J. B. Morse, Cazenovia, Madison,..... 50

Special premium recommended to N. Culver, Arcadia, Wayne, of Plate valued at,..... 25

Field Crops.

Best crop of wheat, not less than two acres, J. M. Waterbury, North Adams, Jefferson, 2 acres, 86 bushels, ... $15

Best crop of spring wheat, not less than two acres, Charles W. Eells, Westmoreland, Oneida, 2 acres, 1 rod, 76 bush., 52 lbs., ... 15

2d do. Hart Massey, Watertown, Jefferson, 2½ acres, 64 bush., 10

Best crop of Indian corn, not less than two acres, George R. Eells, Clinton, Oneida, 2½ acres, 218½ bushels,..... 20

2d do., Ira Apthorp, Riga, Monroe, 2 acres, 183 bushels,... 15

3d do., E. S. Hayward, Brighton, Monroe, 2.55-100 acres, 186½ bushels,..... 8

Best crop of barley, not less than two acres, R. W. Hess, Fenner, Madison, 16 acres, 3 roods, 35 rods, 779.22-48 bushels,..... 15

Best crop of rye, not less than 2 acres, E. W. Bushnell, Hillsdale, Columbia, 3 acres, 3 roods, 29 rods, 163.2-56 bushels, 15

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2d best crop of rye, not less than 2 acres, H. Converse, Pamelia, Jefferson, 2.12-100 acres, 81 bushels,..... $10
Best crop of oats, not less than 2 acres, J. W. Jolley, Coeymans, per acre, 76½ bushels,..... 15
Best crop of buckwheat, not less than one acre, Charles W. Eells, Westmoreland, Oneida, 1 acre, 6 rods, 82 bushels, 26 lbs.,..... 8
Best crop of peas, not less than one acre, J. W. Jolley, Coeymans, 1.86-100 acre, 88 bushels,..... 8
2d do., N. Hitchcock, jr., Homer, 1 acre, 3 roods, 5 rods, 74½ bushels,..... 5
Best crop of beans, not less than one acre, David Conradt, Brunswick, Rensselaer, 1 acre, 12 rods, 30½ bushels,..... 8
Best crop of carrots, not less than half an acre, 60 lbs. to the bushel, E. S. Hayward, Brighton, Monroe, one half acre, 378 bushels,..... 8
Best acre of timothy seed, D. Van Vechten, Mohawk, one acre, 5 bushels, 27 quarts,..... 5

GRAIN AND SEEDS,

Best 5 bushels winter wheat, Levi Shaw, Rensselaerville, Albany, 63 lbs. per bushel,..... $8
2d do., O. Howland, Owasco, Cayuga, 62 lbs. per bushel,... 5
3d do., O. Howland, Owasco, Cayuga, 62 do ... 3
Hon. T. C. Peters, Darien, Genesee, white, blue stem wheat, 62 lbs. per bushel,.....S. S. Medal and Trans.
Best 5 bushels spring wheat, David Conradt, Brunswick, Rensselaer, 63 lbs. per bushel,..... $8
2d do., O. Howland, Owasco, 63 lbs. per bushel,..... 5
3d do., David Hess, Fenner, Madison, 63 lbs. per bushel,.. 3
Best 5 bushels of rye, David Conradt, Brunswick, 59 lbs. per bushel, ... 5
2d do., Levi Shaw, Rensselaerville, 58 lbs. per bushel,..... 3
3d do., E. W. Bushnell, Hillsdale, 58 lbs. per bushel,..... 2
Best 5 bushels four-rowed barley, O. Howland, Owasco, 48 lbs. per bushel,..... 5
Best 5 bushels two-rowed barley, J. Rapalje & Co., Rochester, 51 lbs. per bushel,..... 5

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2d best 5 bushels two-rowed barley, Wm. Davison, Hartwick, 51 lbs. per bushel, ... $3
3d do., O. Howland, Owasco, 51 lbs. per bushel,..... 2
Best 5 bushels oats, David Hess, Fenner, Madison, 43 lbs. per bushel,..... 5
2d do., Peter Crispell, jr., Hurley, 43 lbs. per bushel,.. ... 3
3d do., James W. Jolley, Coeymans, Albany, 33 lbs. per bushel, ... 2
Best 5 bushels yellow corn, Volney Burgess, Chatham, 60 lbs. per bushel,..... 5
O. Howland, Owasco, 60 lbs. per bushel,..... 5
E. S. Hayward, Monroe, 60 lbs. per bushel, $5;—equal premium to each exhibitor.
Best 5 bushels white corn, Levi Shaw, Rensselaerville, 58 lbs. per bushel,..... $5
O. Howland, Owasco, 58 lbs. per bushel,..... 5
David Conradt, Brunswick, 58 lbs. per bushel, $5; equal premium to each exhibitor.
Best 5 bushels of peas, O. Howland, Owasco,..... $5
J. Rapalje & Co., Rochester, 8 varieties of peas, each sample very superior,.....Silver Medal and Trans.
Best 5 bushels of white beans, O. Howland, Owasco,..... $5
2d do., David Hess, Fenner,..... 3
Best 5 bushels large clover seed, O. Howland, Owasco, 62¾ lbs. to the bushel, ... 5
Best 5 bushels small clover seed, Douw Van Vechten, Mohawk, 62 lbs,..... . . 5
Best 5 bushels timothy seed, O. Howland, Owasco,..... 5
2d do., D. Van Vechten, Mohawk,..... 3
Discretionary premium of Small Silver Medal and Transact. was awarded to C. F. Crossman, Rochester, for varieties of peas, beans, &c.
Another to D. A. Buckley, of Williamstown, Mass., for large varieties of wheat, corn, &c., ... 5
L. L. French, Warren, Herkimer, special premium on peas, beans, buckwheat and corn,.....Trans. and 5
Buckwheat, 43 lbs., per bushel, O. Howland, S. S. M. and Trans.

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DAIRY.

BUTTER.

Best 3 tubs of butter, Joshua Ballard, 2d, Homer, Cup, value $15
2d do., George B. Powell. Milton, Saratoga, Cup, value,... 10
3d do., Miss Henrietta Daniels, Greenfield, Saratoga,..... 5
4th do., N. Hitchcock, jr., Homer,..... ... .Trans.
L. L. French, Warren, Herkimer, discretionary premium, for 3 tubs of butter,..... .....Small Silver Medal and $5

CHEESE.

Best 3 cheese, John Winslow, Watertown, Jeffer'n, Cup, value $15
2d do, Moses Eames, Rutland, Jefferson,..... Cup, value $10
3d do, George Clark, Hartwick, Otsego, ... 5

Committee recommend a volume of Transactions to George Clark, for old cheese.

FRUIT.

APPLES.

1st premium, H. R. Brown, Greece, Monroe, 28 varieties, largest collection,..... Silver Med.
2d do, A. B. Rose, Wyoming, 25 varieties, ... Downing's Fruits.
3d do, N. & E. S. Hayward, Monroe, 20 varieties, Down. Fruits.
Frank Atwater, Ithaca, 16 varieties; Henry Freeman, Richfield, Otsego, 14 varieties; C. F. Crossman, Rochester, 12 varieties; each a copy of ..... Barry's Fruit Garden.
Isaac Merritt, Monroe, 11 varieties; Hart Massey, Watertown, Jefferson, 11 varieties; B. B. Kirtland, Rensselaer, 5 varieties; copies of ..... Thomas on Fruits.
J. H. Watts, Rochester; Isaac Foster, Hillsdale, Columbia, Wm. Bacon, Richmond, Mass.; Wm. Robson, Westmoreland, Oneida; J. Winslow, A. Stevens, Volume of Transactions.
A. Frost & Co., Rochester, 21 varieties, very fine, arrived after the fruits were examined,..... Downing.

PEARS.

Ellwanger & Barry, Rochester, 27 varieties, all fine size and beautiful appearance, to which was awarded Sil. Med. and Dip.

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Grapes.

John S. Goold, Albany, Golden Chasselas, Catawba, and Isabella, in fine edible condition, grown in open air and kept in cotton; awarded copy of ..... Barry's Fruit Garden.

Thomas T. Beebe, Albany, Isabella grapes, Barry's Fruit Garden.

Fat Stock.

Best fat ox, 4 years old and upwards, James Upton, Greece, Monroe,	$30
2d do, W. P. & C. S. Wainwright, Rhinebeck, Dutchess,	25
3d do, James Upton, Greece, Monroe,	20
Best fat steer, 3 years old, Robert Rome, Geneseo,	25
2d do, G. V. Sackett, Seneca Falls,	20
3d do, G. V. Sackett, Seneca Falls,	15
Best fat cow, 4 years and upwards, R. Rome, Geneseo,	20
2d do, R. Rome, Geneseo,	15
3d do, Henry Hazen, Martinsburgh,	10
Best fat heifer, 3 years old, Robert Rome, Geneseo,	15
2d do, Robert Rome, Geneseo,	10
3d do, Robert Rome, Geneseo,	5
Best spayed heifer, 3 years old, 1st, Robert Rome, Geneseo,	15
2d do, Robert Rome, Geneseo,	10
3d do, Robert Rome, Geneseo,	5
Three best long-wooled sheep, 2 years and upwards, R. Rome, Geneseo,	10
2d do, John L. Pratt, Cambridge, Washington,	8
Three best cross breed sheep, 2 years and upwards, 1st, Nathaniel Brownell, Pittstown,	10
2d do, Nathaniel Brownell, Pittstown,	8
George Shaffer, Monroe, 3 superior spayed heifers, not presented for competition, but owing to their acknowledged excellence, committee recommended an award of	15
D. A. Buckley, Williamstown, Mass., a fat ox,	10

Dressed Meats and Poultry.

Best carcass of long-wooled sheep, Patrick Downey, Albany,	$5
2d do, Patrick Downey, Albany,	3
Best carcass of middle-wooled sheep, O. Howland, Owasco,	
2d do, George Hallet,	3

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Best carcass cross-breed, Nathan Browne, Pittstown, Rensselaer, ... 5
2d do, Nathan Browne, Pittstown, Rensselaer, ... 3
Best dressed hog, weighing under 350 lbs., J. Winne, Albany, ... 5
2d best do, J. Winne, Albany, ... 3
Best pair of dressed turkeys, O. Howland, Owasco, ... 2
2d do, O. Howland, Owasco, ... 1
Best pair of geese, O. Howland, ... 2
2d do, W. Davison, Otsego, ... 1
Best pair of ducks, Wm. Davison, ... 2
Best pair of capons, O. Howland, ... 2
2d best do do 1
Best pair of chickens, O. Howland, ... 2
2d best do do 1
One carcass of beef, by James Battersby, Albany, committee recommend premiun of 3

SWINE.

Col. J. M. Sherwood, Auburn, Suffolk sow, two years old in August, and two Suffolk pigs, between four and five months old, bred from imported stock. The committee have no hesitation in pronouncing them the best ever exhibited to the society.

LIVE POULTRY.

H. N. Wicks, Albany, a coop of wild turkeys, very fine specimens.

W. G. Reynolds & Co., a coop of Turkeys, which show plainly the advantage of breeding, a cross of wild turkeys with the common turkey.

A coop of black turkeys, name of exhibitor not given; very much approved by breeders, for their hardiness and flavor.

E. E. Platt, Albany, two coops black Shanghais, large; best on the ground.

E. Carey, Albauy, two coops Shanghais, good specimens.

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B. P. Johnson, Albany, a coop of buff Cochin Chinas, very fine; also, a pair of gray Shanghais; also, a very handsome pair of Bolton grays.

E. Jones, Albany, a coop of buff Shangais, which contained, in the opinion of the committee, two of the best pullets on the ground; also, a coop of white Dorkings and one of lop-eared Rabbits.

B. B. Kirtland, Greenbush, a beautiful pair of Shanghai chickens; also, a coop of black Spanish, the best on the ground; also, one pair Aylesbury Ducks.

J. B. Lottridge, Hoosick, the largest lot of Shanghai fowls, a very fine collection. The hens were particularly admired, being short-legged and full breasted. These were from the Forbes' stock.

H. N. Wicks, Albany, Irish game, two coops hens, from importations of T. C. Abrams. Also, Fairback Pheasants, a large and fine variety, bred from Mr. Abrams' stock. One coop of English game.

E. E. Platt, Albany, a coop of Silver Polands.

Mr. Morgan, Watervliet, one coop of Silver Polands; also, two coops, being a cross of Shanghai and common fowl.

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